

Girija Chetty  
Professor  
Software Engineering



## Biography

Dr. Girija Chetty has a Bachelors and Masters degree in Electrical Engineering and Computer Science from India, and PhD in Information Sciences and Engineering from Australia. She has more than 35 years of experience in Industry, Research and Teaching from Universities and Research and Development Organisations from India and Australia, and has held several leadership positions including Head of Software Engineering and Computer Science, Program Director of ITS courses, and Course Director for Master of Computing and Information Technology Courses. Currently, she is a Full Professor in Computing and Information Technology at School of Information Technology and Systems, at University of Canberra, Australia, and leads a research group with several PhD students, Post Docs, research assistants and regular International and National visiting researchers. She is a Senior Member of IEEE, USA, and senior member of Australian Computer Society, and ACM member, and her research interests are in the area of multimodal systems, computer vision, pattern recognition, data mining, and medical image computing. She has published extensively with more than 200 fully refereed publications in several invited book chapters, edited books, high quality conference and journals, and she is in the editorial boards, technical review committees and regular reviewer for several IEEE, Elsevier and IET journals in the area related to her research interests. She is highly interested in seeking wide and interdisciplinary collaborations, research scholars and visitors in her research group.

## Qualifications

PhD, Audio Visual Speaker Identity Verification  
23 Feb 2004 → 17 Dec 2007  
Award Date: 17 Dec 2007

## Research outputs

### Multilevel Pain Assessment with Functional Near-Infrared Spectroscopy: Evaluating $\Delta\text{HBO}_2$ and $\Delta\text{HHB}$ Measures for Comprehensive Analysis

Khan, M. U., Sousani, M., Ghahramani, M., Goecke, R., Chetty, G., Hirachan, N., Joseph, C. & Fernandez-Rojas, R., 11 Jan 2024, In: Sensors. 24, 2, p. 1-17 17 p., 458.

### "Where does it hurt?": Exploring EDA Signals to Detect and Localise Acute Pain

Aziz, S., Khan, M. U., Hirachan, N., Chetty, G., Goecke, R. & Fernandez-Rojas, R., 11 Dec 2023, Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC). Mitsis, G., Ding, L., George Linguraru, M., Xiuquan Ji, J., Jabbari, E., Dokos, S., Liang, J., Heldt, T., Mieloszyk, R., Guiraud, D., Tong, S., Lee, I., Lo, B., Forner-Cordero, A., Panescu, D., Haemmerich, D., van Gils, M., Inan, O., van Oostrom, H. & Goon, I. (eds.). IEEE, Institute of Electrical and Electronics Engineers, Vol. 2023. p. 1-5 5 p. (Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference).

### Automatic deep learning-based pleural effusion segmentation in lung ultrasound images

Vukovic, D., Wang, A., Antico, M., Steffens, M., Ruvinov, I., van Sloun, R. J. G., Canty, D., Royse, A., Royse, C., Haji, K., Dowling, J., Chetty, G. & Fontanarosa, D., 29 Nov 2023, In: BMC Medical Informatics and Decision Making. 23, 2023, p. 1-14 14 p., 274.

### Lecture Notes in Networks and Systems 755: Advances in IoT and Security with Computational Intelligence Proceedings of ICAISA 2023, Volume 1

Mishra, A. (ed.), Gupta, D. (ed.) & Chetty, G. (ed.), 25 Oct 2023, Singapore: Springer. 411 p. (LNNS; vol. 755, no. 1)

### Lecture Notes in Networks and Systems 756: Advances in IoT and Security with Computational Intelligence, Proceedings of ICAISA 2023, Volume 2

Chetty, G. (ed.), Mishra, A. (ed.) & Gupta, D. (ed.), 25 Oct 2023, Singapore: Springer. 418 p. (Lecture Notes in Networks and Systems ; vol. 756, no. 2)

**An Automatic Decision Support System for Assessing SDG Contributions**

Uttarwar, M. & Chetty, G., Sept 2023, *Advances in IoT and Security with Computational Intelligence : Proceedings of ICAISA 2023, Volume 1*. Mishra, A., Gupta, D. & Chetty, G. (eds.). 1 ed. Singapore: Springer, Vol. 1. p. 1-13 13 p. (Lecture Notes in Networks and Systems; vol. 755 LNNS).

**Universal Object Detection Under Unconstrained Environments**

Kaur, N., Swaroopa, K. M. & Chetty, G., Sept 2023, *Advances in IoT and Security with Computational Intelligence : Proceedings of ICAISA 2023, Volume 2*. Mishra, A., Gupta, D. & Chetty, G. (eds.). 1 ed. Singapore: Springer, Vol. 2. p. 395-404 10 p. (Lecture Notes in Networks and Systems; vol. 756 LNNS).

**A framework for vehicle quality evaluation based on interpretable machine learning**

Alwadi, M., Chetty, G. & Yamin, M., Jan 2023, In: International Journal of Information Technology (Singapore). 15, 1, p. 129-136 8 p.

**A low-resolution real-time face recognition using extreme learning machine and its variants**

Rajpal, A., Sehra, K., Mishra, A. & Chetty, G., 2023, In: Imaging Science Journal. 71, 5, p. 456-471 16 p.

**Toward a Generic Multi-modal Medical Data Representation Model**

Swaroopa, K. M., Kaur, N. & Chetty, G., 2023, *Advances in IoT and Security with Computational Intelligence - Proceedings of ICAISA 2023*. Mishra, A., Gupta, D. & Chetty, G. (eds.). Netherlands: Springer, Vol. 2. p. 385-394 10 p. (Lecture Notes in Networks and Systems; vol. 756 LNNS).

**Automatic deep learning-based consolidation/collapse classification in lung ultrasound images for COVID-19 induced pneumonia**

Durrani, N., Vukovic, D., van der Burgt, J., Antico, M., van Sloun, R. J. G., Carty, D., Steffens, M., Wang, A., Royse, A., Royse, C., Haji, K., Dowling, J., Chetty, G. & Fontanarosa, D., Dec 2022, In: Scientific Reports. 12, 1, p. 1-15 15 p., 17581.

**Multi-scale 3D UNet: Multi-scale 3D UNet for Brain Tumor Segmentation**

Ahmad, P., Qamar, S., Shen, L., Rizvi, S. Q. A., Ali, A. & Chetty, G., 15 Jul 2022, *International MICCAI Brainlesion Workshop: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries - 7th International Workshop, BrainLes 2021, Held in Conjunction with MICCAI 2021*. Crimi, A. & Bakas, S. (eds.). Springer, p. 30-41 12 p. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 12963 LNCS).

**A low resource 3D U-Net based deep learning model for medical image analysis**

Chetty, G., Yamin, M. & White, M., Feb 2022, In: International Journal of Information Technology (Singapore). 14, 1, p. 95-103 9 p.

**Cardiovascular Disease Detection Based on Interpretable and Explainable AI**

Rajjiwal, N. S. & Chetty, G., 2022, *Proceedings of IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2022*. IEEE, Institute of Electrical and Electronics Engineers, p. 1-7 7 p. (Proceedings of IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2022).

**Deep Learning for Real Estate Trading**

Zhao, Y., Chetty, G. & Tran, D., 2022, *Proceedings of IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2022*. IEEE, Institute of Electrical and Electronics Engineers, (Proceedings of IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2022).

**Deep Learning for Real-Time Malaria Parasite Detection and Counting Using YOLO-mp**

Koirala, A., Jha, M., Bodapati, S., Mishra, A., Chetty, G., Sahu, P. K., Mohanty, S., Padhan, T. K., Mattoo, J. & Hukkoo, A., 2022, In: IEEE Access. 10, p. 102157-102172 16 p.

**Automatic deep learning-based pleural effusion classification in lung ultrasound images for respiratory pathology diagnosis**  
Tsai, C. H., van der Burgt, J., Vukovic, D., Kaur, N., Demi, L., Canty, D., Wang, A., Royse, A., Royse, C., Haji, K., Dowling, J., Chetty, G. & Fontanarosa, D., Mar 2021, In: *Physica Medica*. 83, p. 38-45 8 p.

**Deep Learning based Decision Support Framework for Cardiovascular Support Disease Prediction**  
Rajjiliwal, N. S. & Chetty, G., 2021, *2021 IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2021*. Khan, MGM., Chetty, G. & Xia, F. (eds.). United States: IEEE, Institute of Electrical and Electronics Engineers, p. 1-12 12 p. (2021 IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2021).

**Multimodal Segmentation Based on a Novel 3D U-Net Deep Learning Architecture**  
Swaroopa, K. M. & Chetty, G., 2021, *2021 IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2021*. Khan, MGM., Chetty, G. & Xia, F. (eds.). United States: IEEE, Institute of Electrical and Electronics Engineers, (2021 IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2021).

**A Novel Approach using Deep Neural Network Vessel Segmentation Retinal Disease Detection**  
Kaur, N., Chetty, G. & Singh, L., 16 Dec 2020, *2020 IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2020*. United States: IEEE, Institute of Electrical and Electronics Engineers, p. 1-6 6 p. 9411629. (2020 IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2020).

**Deep Machine Learning Digital library recommendation system based on Metadata for Arabic and English Languages**  
Almaghrabi, M. & Chetty, G., 16 Dec 2020, *2020 IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2020*. United States: IEEE, Institute of Electrical and Electronics Engineers, p. 1-6 6 p. 9411525. (2020 IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2020).

**Message from DSS 2020 General Chairs**  
Sheng, M., Chetty, G. & Chu, X., Dec 2020, p. 1-1. 1 p.

**Multilingual Sentiment Recommendation System based on Multilayer Convolutional Neural Networks (MCNN) and Collaborative Filtering based Multistage Deep Neural Network Models (CFMDNN)**  
Almaghrabi, M. & Chetty, G., Nov 2020, *2020 IEEE/ACS 17th International Conference on Computer Systems and Applications, AICCSA 2020*. Akoglu, A., Talbi, E-G., Vargas-Solar, G. & Musicante, M. A. (eds.). United States: IEEE, Institute of Electrical and Electronics Engineers, p. 1-6 6 p. 9316492. (Proceedings of IEEE/ACS International Conference on Computer Systems and Applications, AICCSA; vol. 2020-November).

**Improving sentiment analysis in arabic and english languages by using multi-layer perceptron model (MLP)**  
Almaghrabi, M. & Chetty, G., 1 Oct 2020, p. 745-746. 2 p.

**Genetic Algorithms for the Travelling Salesman Problem: A Crossover Comparison**  
Alzyadat, T., Yamin, M. & Chetty, G., Mar 2020, In: *International Journal of Information Technology*. 12, 1, p. 209-213 5 p.

**Automatic Segmentation of Achilles Tendon Tissues Using Deep Convolutional Neural Network**  
Alzyadat, T., Praet, S., Chetty, G., Goecke, R., Hughes, D., Kumar, D., Welvaert, M., Vlahovich, N. & Waddington, G., 1 Jan 2020, *Machine Learning in Medical Imaging - 11th International Workshop, MLMI 2020, Held in Conjunction with MICCAI 2020, Proceedings*. Liu, M., Yan, P., Lian, C. & Cao, X. (eds.). Netherlands: Springer, Vol. 12436. p. 444-454 11 p. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 12436 LNCS).

**Deep Learning with XGBoost for Real Estate Appraisal**  
Zhao, Y., Chetty, G. & Tran, D., 6 Dec 2019, *2019 IEEE Symposium Series on Computational Intelligence, SSCI 2019*. United States: IEEE, Institute of Electrical and Electronics Engineers, p. 1396-1401 6 p. 9002790. (2019 IEEE Symposium Series on Computational Intelligence, SSCI 2019).

**Automatic brain image analysis based on multimodal deep learning scheme**  
Chetty, G., Singh, M. & White, M., 2 Dec 2019, *Proceedings - 2019 International Conference on Machine Learning and Data Engineering (iCMLDE 2019)*. Rhee, P. K., Hwa, K-Y., Pai, T-W., Howard, D. & Bashar, R. (eds.). United States: IEEE, Institute of Electrical and Electronics Engineers, p. 97-100 4 p. 8995755. (Proceedings - International Conference on Machine Learning and Data Engineering, iCMLDE 2019).

**Deep learning based spam detection system**

Chetty, G., Bui, H. & White, M., 2 Dec 2019, *Proceedings - International Conference on Machine Learning and Data Engineering, iCMLDE 2019*. Rhee, P. K., Hwa, K-Y., Pai, T-W., Howard, D. & Bashar, R. (eds.). United States: IEEE, Institute of Electrical and Electronics Engineers, p. 91-96 6 p. 8995757. (Proceedings - International Conference on Machine Learning and Data Engineering, iCMLDE 2019).

**Investigating Deep Learning Word2vec Model for Sentiment Analysis in Arabic and English languages for User's reviews**

Almaghrabi, M. & Chetty, G., Dec 2019, *Proceedings of the 2019 IEEE Asia-Pacific Conference on Computer Science and Data Engineering (CSDE)*. Washio, T. (ed.). United States: IEEE, Institute of Electrical and Electronics Engineers, p. 1-6 6 p. 9162391. (2019 IEEE Asia-Pacific Conference on Computer Science and Data Engineering, CSDE 2019).

**Enhancing clinical name entity recognition based on hybrid deep learning scheme**

Phan, R., Luu, T., Davey, R. & Chetty, G., 8 Nov 2019, *Proceedings - 19th IEEE International Conference on Data Mining Workshops, ICDMW 2019*. Papapetrou, P., Cheng, X. & He, Q. (eds.). United States: IEEE, Institute of Electrical and Electronics Engineers, p. 1049-1055 7 p. 8955534. (IEEE International Conference on Data Mining Workshops, ICDMW; vol. 2019-November).

**Risk factors identification for heart disease in unstructured dataset using deep learning approach**

Rajput, K., Chetty, G. & Davey, R., 8 Nov 2019, *Proceedings - 19th IEEE International Conference on Data Mining Workshops, ICDMW 2019*. Papapetrou, P., Cheng, X. & He, Q. (eds.). United States: IEEE, Institute of Electrical and Electronics Engineers, p. 1056-1059 4 p. 8955584. (IEEE International Conference on Data Mining Workshops, ICDMW; vol. 2019-November).

**HOG Based Facial Recognition Approach Using Viola Jones Algorithm and Extreme Learning Machine**

Sehra, K., Rajpal, A., Mishra, A. & Chetty, G., 29 Jun 2019, *Computational Science and Its Applications – ICCSA 2019: 19th International Conference, Saint Petersburg, Russia, July 1–4, 2019, Proceedings, Part V*. Misra, S., Gervasi, O., Murgante, B., Stankova, E., Korkhov, V., Torre, C., Rocha, A. M. A. C., Taniar, D., Apduhan, B. O. & Tarantino, E. (eds.). Cham, Switzerland: Springer, Vol. 11623. p. 423-435 13 p. (Lecture Notes in Computer Science; vol. 11623).

**A Deep Learning Based Collaborative Neural Network Framework for Recommender System**

Almaghrabi, M. & Chetty, G., 15 Jan 2019, *Proceedings - International Conference on Machine Learning and Data Engineering, iCMLDE 2018*. Howard, D., Bashar, M. R. & Rhee, P. K. (eds.). IEEE, Institute of Electrical and Electronics Engineers, p. 128-135 8 p. 8614014. (Proceedings - International Conference on Machine Learning and Data Engineering, iCMLDE 2018).

**Biomedical Named Entity Recognition Based on Hybrid Multistage CNN-RNN Learner**

Phan, R., Luu, T. M., Davey, R. & Chetty, G., 15 Jan 2019, *Proceedings International Conference on Machine Learning and Data Engineering (iCMLDE 2018)*. Rhee, P. K., Howard, D. & Bashar, R. (eds.). United States: IEEE, Institute of Electrical and Electronics Engineers, p. 128-135 8 p. 8614015. (Proceedings - International Conference on Machine Learning and Data Engineering, iCMLDE 2018).

**Embodied Conversational Agents and Interactive Virtual Humans for Training Simulators**

CHETTY, G. & White, M., 2019, *Proceedings of 2019 Audio Visual Speech Processing Conference (AVSP)*. Melbourne, Australia: International Speech Communication Association, p. 1-5 5 p.

**Cardiovascular Risk Prediction Based on XGBoost**

Rajliwall, N. S., Davey, R. & Chetty, G., 10 Dec 2018, *Proceedings: 2018 5th Asia-Pacific World Congress on Computer Science and Engineering : APWConCSE 2018*. Ali, A. B. M. S., Miah, S. & Valluri, M. R. (eds.). Danvers, USA: IEEE, Institute of Electrical and Electronics Engineers, p. 246-252 7 p. 8853798. (Proceedings - 2018 5th Asia-Pacific World Congress on Computer Science and Engineering, APWC on CSE 2018).

**Obesity and Co-Morbidity Detection in Clinical Text Using Deep Learning and Machine Learning Techniques**

Rajput, K., Chetty, G. & Davey, R., 10 Dec 2018, *Proceedings - 2018 5th Asia-Pacific World Congress on Computer Science and Engineering, APWC on CSE 2018: APWConCSE 2018*. Ali, A. B. M. S., Miah, S. & Rao Valluri, M. (eds.). Danvers, USA: IEEE, Institute of Electrical and Electronics Engineers, p. 51-56 6 p. 8853828. (Proceedings - 2018 5th Asia-Pacific World Congress on Computer Science and Engineering, APWC on CSE 2018).

**Performance Analysis of Deep Neural Models for Automatic Identification of Disease Status**

Rajput, K., Chetty, G. & Davey, R., 3 Dec 2018, *Proceedings International Conference on Machine Learning and Data Engineering (iCMLDE 2018)*. Rhee, P. K., Howard, D. & Bashar, R. (eds.). NJ, United States: IEEE, Institute of Electrical and Electronics Engineers, p. 136-141 6 p. 8614016. (Proceedings - International Conference on Machine Learning and Data Engineering, iCMLDE 2018).

**Impact Rating Scales on Recommender System and Using Deep Learning and Neural Network Models to Improve Rating Prediction**

Almaghrabi, M. & Chetty, G., 1 Dec 2018, *Proceedings - 2018 5th Asia-Pacific World Congress on Computer Science and Engineering, APWC on CSE 2018: APWConCSE 2018*. Ali, A. B. M. S., Miah, S. & Rao Valluri, M. (eds.). Danvers, USA: IEEE, Institute of Electrical and Electronics Engineers, p. 207-213 7 p. 8853658. (Proceedings - 2018 5th Asia-Pacific World Congress on Computer Science and Engineering, APWC on CSE 2018).

**Deep Learning Based Biomedical NER Framework**

Phan, R., Luu, T. M., Davey, R. & Chetty, G., 18 Nov 2018, *Proceedings of the 2018 IEEE Symposium Series on Computational Intelligence, SSCI 2018*. Sundaram, S. (ed.). Bangalore, India: IEEE, Institute of Electrical and Electronics Engineers, p. 33-40 8 p. 8628740. (Proceedings of the 2018 IEEE Symposium Series on Computational Intelligence, SSCI 2018).

**Deep neural models for chronic disease status detection in free text clinical records**

Rajput, K., Chetty, G. & Davey, R., 17 Nov 2018, *Proceedings - 18th IEEE International Conference on Data Mining Workshops, ICDMW 2018*. Yu, J., Li, Z., Tong, H. & Zhu, F. (eds.). United States: IEEE, Institute of Electrical and Electronics Engineers, p. 864-869 6 p. 8637453. (IEEE International Conference on Data Mining Workshops, ICDMW; vol. 2018-November).

**Customer Life Time Value Model Framework Using Gradient Boost Trees with RANSAC Response Regularization**

SINGH, L., Kaur, N. & CHETTY, G., 8 Jul 2018, *Proceedings 2018 International Joint Conference on Neural Networks (IJCNN)*. Rio de Janeiro, Brazil, Brazil: IEEE, Institute of Electrical and Electronics Engineers, p. 1527-1534 8 p. 8489710. (Proceedings of the International Joint Conference on Neural Networks; vol. 2018-July).

**Lifting Wavelet Transform based Fast Watermarking of Video Summaries using Extreme Learning Machine**

Mishra, A., Agarwal, C. & CHETTY, G., 8 Jul 2018, *Proceedings 2018 International Joint Conference on Neural Networks (IJCNN)*. Rio de Janeiro, Brazil: IEEE, Institute of Electrical and Electronics Engineers, p. 1-7 7 p. 8489305. (Proceedings of the International Joint Conference on Neural Networks; vol. 2018-July).

**Neuro Fuzzy Architecture for Gray Scale Image Watermarking using Fractal Dimensions**

Mishra, A., Sehra, K. & CHETTY, G., 8 Jul 2018, *Proceedings 2018 International Joint Conference on Neural Networks (IJCNN)*. Alippi, C., Melin, P. & Ting, C-K. (eds.). Brazil: IEEE, Institute of Electrical and Electronics Engineers, Vol. 2018-July. p. 1-8 8 p. 8489350. (Proceedings of the International Joint Conference on Neural Networks; vol. 2018-July).

**Optimization of scaling factors for image watermarking using harmony search algorithm**

Mishra, A., Agarwal, C. & Chetty, G., 4 Jul 2018, *Computational Science and Its Applications – ICCSA 2018 - 18th International Conference, 2018, Proceedings*. Gervasi, O., Murgante, B., Misra, S., Stankova, E., Torre, C. M., Rocha, A. M. A. C., Taniar, D., Apduhan, B. O., Tarantino, E. & Ryu, Y. (eds.). Netherlands: Springer, Vol. 10963. p. 422-434 13 p. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 10963 LNCS).

**Clinical Name Entity Recognition Based on Recurrent Neural Networks**

LUU, T. M., PHAN, R., DAVEY, R. & CHETTY, G., 2 Jul 2018, *Proceedings of the 2018 18th International Conference on Computational Science and Its Applications, ICCSA 2018*. Taniar, D., Tarantino, E., Misra, B. M. S., Gervasi, O., Torre, C. M., Ryu, Y., Stankova, E., Rocha, A. M. A. C. & Apduhan, B. O. (eds.). Australia: IEEE, Institute of Electrical and Electronics Engineers, p. 1-9 9 p. 8439147

**A Virtual Sensor Network Framework for Vehicle Quality Evaluation**

ALWADI, MD., CHETTY, G. & YAMIN, M., 15 Mar 2018, *12th INDIACom-2018; 2018 5th International Conference on Computing for Sustainable Global Development*. Hoda, M. V. (ed.). New Delhi, India: BVICAM, p. 1416-1420 5 p.

**Machine learning based models for cardiovascular risk prediction**

Rajliwall, N. S., Davey, R. & Chetty, G., 2018, *Proceedings International Conference on Machine Learning and Data Engineering (iCMLDE 2018)*. Rhee, P. K., Howard, D. & Bashar, R. (eds.). NJ, United States: IEEE, Institute of Electrical and Electronics Engineers, p. 142-148 7 p. 8614017. (Proceedings - International Conference on Machine Learning and Data Engineering, iCMLDE 2018).

**Oral supplementation of specific collagen peptides accelerates improvement in Achilles tendon pain and function in combination with a tailored exercise program**

Praet, S., Alzyadat, T., Purdam, C., Welvaert, M., Gaida, J., Chetty, G., Manzanero, S., Vlahovich, N., Hughes, D. & Waddington, G., 2018, In: *Journal of Bodywork and Movement Therapies*. 22, 4, p. 862-863 2 p.

**PHIs (Protected Health Information) identification from free text clinical records based on machine learning**

Rajput, K., Chetty, G. & Davey, R., 27 Nov 2017, *Proceedings 2017 IEEE Symposium Series on Computational Intelligence (SSCI 2017)*. Bonissone, P. & Fogel, D. (eds.). Hawaii: IEEE, Institute of Electrical and Electronics Engineers, Vol. 2018-January. p. 1-9 9 p. (2017 IEEE Symposium Series on Computational Intelligence, SSCI 2017 - Proceedings; vol. 2018-January).

**Chronic Disease Risk Monitoring Based on an Innovative Predictive Modelling Framework**

RAJLIWALL, N., CHETTY, G. & DAVEY, R., 26 Nov 2017, *2017 IEEE Symposium Series on Computational Intelligence (SSCI) .* Fogel, G. (ed.). Honolulu, HI, USA: IEEE, Institute of Electrical and Electronics Engineers, p. 1-8 8 p. (2017 IEEE Symposium Series on Computational Intelligence, SSCI 2017 - Proceedings; vol. 2018-January).

**A Multilevel NER Framework for Automatic Clinical Name Entity Recognition**

LUU, T. M., PHAN, R., DAVEY, R. & CHETTY, G., 18 Nov 2017, *2017 IEEE International Conference on Data Mining Workshops*. Gottumukkala, R., Karypis, G., Raghavan, V., Wu, X., Miele, L., Aluru, S., Ning, X. & Dong, G. (eds.). New Orleans: IEEE, Institute of Electrical and Electronics Engineers, p. 1135-1143 8 p. (IEEE INTERNATIONAL CONFERENCE ON DATA MINING WORKSHOPS).

**A Novel Data Mining Testbed for User Centred Modelling and Personalisation of Digital Library Services**

ALMAGRHRABI, M. & CHETTY, G., 14 Nov 2017, *Proceedings - 13th IEEE International Conference on eScience, eScience 2017*. Auckland, New Zealand: IEEE, Institute of Electrical and Electronics Engineers, p. 434-435 2 p. 8109163. (Proceedings - 13th IEEE International Conference on eScience, eScience 2017).

**A distributed smart fusion framework based on hard and soft sensors**

CHETTY, G. & Yamin, M., 2017, In: *International Journal of Information Technology* . 9, 1, p. 19-31 13 p.

**Automated visibility map of the internal colon surface from colonoscopy video**

ARMIN, A., CHETTY, G., De Visser, H., Dumas, C., Grimpens, F. & salvado, O., 1 Sept 2016, In: *International Journal of Computer Assisted Radiology and Surgery*. 11, 9, p. 1599-1610 12 p.

**Investigation into Interoperability in Cloud Computing: An Architectural Model**

Sutherland, S. & Chetty, G., Mar 2016, In: *Journal of Computers*. 11, 2, p. 159-168 10 p.

**A smart fusion framework for multimodal object, activity and event detection**

CHETTY, G. & Yamin, M., 2016, *Proceedings of the 10th INDIACom; 2016 3rd International Conference on Computing for Sustainable Global Development, INDIACom 2016*. Hoda, M. N. (ed.). New Delhi, India: IEEE, Institute of Electrical and Electronics Engineers, Vol. 1. p. 1417-1422 6 p. 7724498. (Proceedings of the 10th INDIACom; 2016 3rd International Conference on Computing for Sustainable Global Development, INDIACom 2016).

**Body sensor networks for human activity recognition**

CHETTY, G. & White, M., 2016, *Proceedings Signal Processing and Information Networks (SPIN 2016)*. Dutta, M. K. & Banerjee, J. K. R. P. (eds.). United States of America: IEEE, Institute of Electrical and Electronics Engineers, p. 660-665 6 p. 7566779. (3rd International Conference on Signal Processing and Integrated Networks, SPIN 2016).

**Uninformative Frame Detection in Colonoscopy Through Motion, Edge and Color Features**

ARMIN, A., CHETTY, G., Fripp, J., De Visser, H., Dumas, C., Fazlollahi, A., Grimpel, F. & salvado, O., 2016, *Computer-Assisted and Robotic Endoscopy: Second International Workshop, CARE 2015*. Luo, X., Reichl, T., Reiter, A. & Mariottini, G-L. (eds.). Munich, Germany: Springer, Vol. 9515. p. 153-162 10 p. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 9515).

**Illumination invariant efficient face recognition using a single training image**

Jangid, B., Biswas, K. K., Hanmandlu, M. & CHETTY, G., 23 Nov 2015, *Proceedings International Conference on Digital Image Computing and Applications 2015: Techniques and Applications, DICTA 2015*. Sherrah, J. & Suter, D. (eds.). Adelaide, Australia: IEEE, Institute of Electrical and Electronics Engineers, Vol. 1. p. 1-7 7 p. 7371266. (2015 International Conference on Digital Image Computing: Techniques and Applications, DICTA 2015).

**A Multilevel Fusion Approach for Audiovisual Emotion Recognition**

CHETTY, G., WAGNER, M. & GOECKE, R., 2 Jan 2015, *Emotion Recognition: A Pattern Analysis Approach: A Pattern Analysis Approach*. Konar, A. & Chakraborty, A. (eds.). USA: John Wiley & Sons, p. 437-460 24 p. (Emotion Recognition: A Pattern Analysis Approach).

**Analysing the robust EEG channel set for person authentication**

Altahat, S., CHETTY, G., TRAN, D. & MA, W., 2015, *International Conference on Neural Information Processing (ICONIP): Lecture Notes in Computer Science (LNCS)*. Arik, S., Huang, T., Lai, W. K. & Liu, Q. (eds.). Istanbul: Springer, Vol. 9492. p. 162-173 12 p. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 9492).

**A Novel Sensor Selection Scheme for Energy Efficient Environment Monitoring of Wireless Sensor Networks**

Alwadi, MD. & CHETTY, G., 2015, In: International Journal on Data Mining and Intelligent Information Technology Applications. 3, 4, p. 335-338 4 p.

**Automatic clinical speech recognition for CLEF 2015 eHealth challenge**

Luu, T. M., PHAN, R., Davey, R. & Chetty, G., 2015, p. 1-14. 14 p.

**Email Personalization and User Profiling Using RANSAC Multi Model Response Regression Based Optimized Pruning Extreme Learning Machines and Gradient Boosting Trees**

Singh, L. & CHETTY, G., 2015, *Neural Information Processing - 22nd International Conference, ICONIP 2015, Proceedings: Lecture Notes in Computer Science*. Arik, S., Huang, T., Lai, W. K. & Liu, Q. (eds.). Turkey: Springer, Vol. 9489. p. 302-309 8 p. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 9489).

**Energy efficient data mining scheme for high dimensional data**

Alwadi, MD. & CHETTY, G., 2015, *Proceedings of the International Conference on Information and Communications Technologies*. Samuel, P. (ed.). India: Elsevier, Vol. 46. p. 483-490 8 p. (Procedia Computer Science; vol. 46).

**Intelligent human activity recognition scheme for ehealth applications**

CHETTY, G. & Yamin, M., 2015, In: Malaysian Journal of Computer Science. 28, 1, p. 59-69 11 p.

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**Audio-Visual Multimodal Fusion for Biometric Person Authentication and Liveness Verification**

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Chetty, G. & Wagner, M., 2005, *Proceedings of the Conference on Image and Vision Computing - New Zealand*. McCane, B. (ed.). New Zealand: University of Otago, Dunedin, New Zealand., p. 132-137 6 p.

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**Investigating Feature Level Fusion for Checking Liveness in Face-Voice Authentication**

Chetty, G. & Wagner, M., 2005, *Proceedings of the Eighth International Symposium on Signal Processing and Applications*. Piscataway, New Jersey, USA: IEEE, Institute of Electrical and Electronics Engineers, p. 66-69 4 p.

### **Liveness Detection Using Cross-Modal Correlations in Face-Voice Person Authentication**

Chetty, G. & Wagner, M., 2005, *6th Interspeech 2005 and 9th European Conference on Speech Communication and Technology (EUROSPEECH)*. Flurui, T. (ed.). Geneva: International Speech Communication Association, p. 2181-2184 4 p.

### **Automated lip feature extraction for liveness verification in audio-video authentication**

Chetty, G. & Wagner, M., 2004, *Proceedings Image and Vision Computing-New Zealand 2004*. Pairman, D., Noreth, H. & McNeill, S. (eds.). New Zealand: University of Canterbury, p. 17-22 6 p.

### **"Liveness" Verification in Audio-Video Authentication**

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### **Liveness Verification in Audio-Video Speaker Authentication**

Chetty, G. & Wagner, M., 2004, *Proceedings of the 10th Australian Conference on Speech, Science and Technology*. Cassidy, S., Cox, F., Mannwell, R. & Palethorpe, S. (eds.). Sydney: Australian Speech Science and Technology Association (ASSTA), p. 358-363 6 p.

Design and development of model robots: a new dimension in the delivery of electronic and computer engineering programs

Chetty, G., 1 Jan 2000, In: *International Journal of Electrical Engineering Education*. 37, 3, p. 249-258 10 p.

Electric field based sensing for underwater vehicle guidance

Chetty, G. & Russell, A., 1 Jan 1998, p. 139-140. 2 p.

### **A new approach to teaching control and instrumentation at an undergraduate level**

Chetty, G. & Brisk, M., 1998, *A new approach to teaching control and instrumentation at an undergraduate level*. Rockhampton, QLD: Engineers Australia, p. 449-452 4 p.

Electric Field Based Obstacle Avoidance

Chetty, G. & Russell, A., 1998, *Field and Service Robotics*. Zelinsky, A. (ed.). London, UK: Springer, p. 364-368 5 p.

### **Integrated teaching technique for management of digital signal processing education**

Chetty, G., 1 Dec 1996, *Fourth International Symposium on Signal Processing and Its Applications*. Gold Coast, Australia: IEEE, p. 788-791 4 p.

Neural network based signal processing scheme for automatic tool wear recognition

Chetty, G., 1996, *Fourth International Symposium on Signal Processing and its Applications*. Brisbane: IEEE, Institute of Electrical and Electronics Engineers, Vol. 2. p. 533-536 4 p.

Knowledge-based object recognition system

Chetty, G. & Deshpande, N., 30 Jun 1995, p. 459-468. 10 p.

## **Activities**

### **Keynote Speech on: "Towards A Global Collective Intelligence - Leveraging Advances in AI, Big Data and Multimodal Science"**

Girija CHETTY (Speaker)  
9 Jan 2018

### **Keynote Speech on Fusion of Augmented and Virtual Reality for Medical Imaging Applications**

Girija CHETTY (Speaker)  
23 Apr 2017

**Keynote Speech on "Deep Fusion Networks and its Applications" at ICICA 2017, Canberra, Australia**  
Girija CHETTY (Speaker)  
12 Jan 2017

**International Conference on Control, Automation and Robotics (ICCAR 2016)**  
Girija CHETTY (Chair) & Maodi Ma (Chair)  
28 Apr 2016 → 30 Apr 2016

**Keynote Speech on "Information Fusion for UAV Surveillance and its applications"**  
Girija CHETTY (Speaker)  
21 Jan 2016

**2015 International Conference on Control, Automation and Robotics (ICCAR)**  
Girija CHETTY (Chair) & Yang Xiao (Chair)  
20 May 2015 → 22 May 2015

## Awards

### Projects

**AI4DigPath: A Novel Malaria Pathogen Detection System for Rural Communities**  
Chetty, G. & Jha, M.  
1/06/22 → 31/05/24

**Automatic Real-time Endoscopy Assistance**  
Chetty, G. & Dumas, C.  
1/01/13 → 30/06/16

**Automatic Real-time Endoscopy Assistance**  
Chetty, G.  
1/01/13 → 31/12/13

**Comprehensive Australian Speech Science Infrastructure: An Audio-Video Speech Corpus of Australian English-via Uni of Western Sydney**  
Burnham, D., Wagner, M., Chetty, G., Goecke, R. & Tran, D.  
1/01/10 → 30/06/15

**DataPOS Prediction Engine "Deep Kitchen**  
Chetty, G.  
9/06/17 → 5/07/17

**Developing a breakthrough multi-modal technology for early diagnosis of Alzheimer's disease**  
Chetty, G.  
1/08/12 → 11/08/13

**AI\_USER: Development of AI guided ultrasound for extreme and remote environments**  
Chetty, G., Dowling, J. & Fontanarosa, D.

**eLiving Lab (Schedule # 3 under the Umbrella Agreement - 2011000120)**  
Waddington, G., Chetty, G., Davey, R., Hanlen, L., Scarvell, J., Sharma AM PhD, D. & Tran, D.  
28/02/14 → 28/02/17

**Machine learning applied to large collections of medical images**

Chetty, G.

18/07/16 → 31/07/19

**Multimodal Brain Image Analysis for Early Detection and Monitoring of Mental Health Disorders**

Chetty, G. & White, M.

1/02/14 → 31/12/17

**The impact of terrorism on financial markets in Australia and New Zealand**

Sathye, M., Chetty, G. & Sharma AM PhD, D.

22/12/06 → 22/12/07

**Using big data-driven approaches for improved population health**

Davey, R., Chetty, G. & Hanlen, L.

16/12/15 → 30/12/16