Information Technology at James Cook University in Singapore

JAMES COOK UNIVERSITY
AUSTRALIA

Cairns
Singapore
Townsville

1 university • 2 countries • 3 tropical locations
Creating a brighter future for life in the tropics world-wide through graduates and discoveries that make a difference.

Research in Information Technology

Information Technology has been a saviour for many problems in the world. It leverages analytical capabilities and efficient processing capabilities to provide solutions in various forms such as the Internet of Things (IoT), robotics and game design, among others. Information Technology research at James Cook University in Singapore is vibrant and varied, spreading across game design and development, machine learning to help alleviate rural poverty and health, or innovative methods for software design.

James Cook University, strategically located in northern Australia and Singapore, especially focuses on tropical issues. James Cook University in Singapore researchers partner with industry, government bodies, universities and other stakeholders to conduct high quality research which contributes to tropical societies and more broadly to societies worldwide.

For further information or expression of interest to collaborate with James Cook University in Singapore, or to pursue a higher degree by research with us, please send an email to researchsupport-singapore@jcu.edu.au.

Profile ◣

Dr Roberto Dillon

Associate Professor, Information Technology
James Cook University (Singapore)

PhD, Electrical & Computer Engineering, University of Genoa, Italy
Meng, Electrical and Electronics Engineering, University of Genoa, Italy

Background

Dr Roberto Dillon is the author of several well received game related books published by AK Peters, CRC Press and Springer and has been invited to speak at the most important game conferences around the world (e.g., GDC, GameConnection, Casual Connect, Develop, GMGC, KGC etc.), as well as more general events like TEDx (Milan, Italy) and Wired (Manila, Philippines).

Dr Dillon is active both as an independent video game (Indie) developer and as an academic in the field of game design and development. His games have been showcased at events like Sense of Wonder Night in Tokyo, FILE Games in Rio de Janeiro and the Indie Prize Showcase at Casual Connect Asia. Dr Dillon's games have also received high positions on Apple's App Store and Google Play across several countries and categories.

Dr Dillon currently lectures on game design and project management. In 2013 he founded, and has directed since then, the very first Museum of Video and Computer Games in South East Asia. Before joining James Cook University in Singapore, Dr Dillon was the Chair of the Game Software Design and Production Department at DigiPen Singapore, teaching a variety of courses ranging from Games History to Game Mechanics, with his students gaining top honors at competitions like the IGF both in San Francisco and Shanghai.

Dr Dillon was also featured in the documentary "Inside the Storm 2, Episode 4: Nintendo," aired on Channel News Asia in 2017, and in several TV news reports and newspapers in Singapore, Italy and the USA.

Areas of expertise

- Game Design and Development
- Formal models for game analysis
- Serious games (training, rehabilitation, etc.)
- Physical and Affective Computing
- Digital Humanities and History of Technology

Impact of research and Achievements

- Formalized new models for game analysis and design (AGE and 6-11 Frameworks), now adopted in the industry and referenced in game education curricula in several universities worldwide

- Developed experimental games selected for international events like "Sense of Wonder Night" at the Tokyo Game Show and FILE Games in Rio de Janeiro

- Developed commercial games that reached top positions across several categories and countries on the AppStore and Google Play

- Certified Scrum Master (2008), Certified Unity Developer (2016), Certified Unity Instructor (2018)

Top five publications

- Dillon, R. (2010). On The Way to Fun: An Emotion Based Approach to Game Design. Boca Raton, FL: AKPeters/CRC Press.

- Dillon, R. (2011). The Golden Age of Video Games: The Birth of a Multi-Billion Dollar Industry. Boca Raton, FL: CRC Press.

- Dillon, R. (2014). Ready. A Commodore 64 Retrospective. Singapore: Springer.

- Dillon, R. (2016). Towards the definition of a framework and grammar for game analysis and design. In M. J. P. Wolf, (Ed): Video Games and Gaming Culture (Critical Concepts in Media and Cultural Studies) (pp.188-193). London: Routledge.

- Dillon, R., & Lundberg, A. (2017). Vampires in video games: Mythic tropes for innovative storytelling. eTropic: electronic journal of studies in the tropics, 16(1), 46-67.

Further
Information
JCU Research Profile

Dr Insu Song

Senior Lecturer, Information Technology
James Cook University (Singapore)

PhD Computer Science, University of Queensland, Australia
BInfoTech (Hons I), Griffith University, Australia
BSc Physics, Chung-Ang University, Seoul, Korea

Background

After completing his undergraduate studies in Physics in Korea in 1991, Dr Song followed up with an Honours degree in Information Technology in 2004, and completed his PhD studies in Computer Science in 2008. Dr Song's research interests include biomedical engineering, health informatics, mental health informatics, knowledge engineering, and text mining. He has more than 15 years of industry experience in information systems design, embedded system design, industrial control system design, electronics engineering, signal processing, patent analysis, and multimedia/game software development. Dr Song has published over 60 peer reviewed papers.

Areas of expertise

- Information systems design

- Embedded system design

- Industrial control system design

- Electronics engineering

- Signal processing

- Health Informatics

- Certified TAA for RTOs (Registered Training Organizations in Australia)

Impact of research

- In 2011, Dr Song was awarded a prestigious international grant (Global Grand Challenges) from the Bill and Melinda Gates foundation to work on mobile applications for providing "Early Child Health Intervention Using Breathing Sound."

- In emerging markets with vast populations, mobility is the key to health services. Mobile-focused healthcare advances simplify the way new technology is adopted by medical professionals and organisations.

Top five publications

- Huang, Y., Song, I., Rana, P., & Koh, G. (2017, May). Fast diagnosis of bowel activities. In Neural Networks (IJCNN), 2017 International Joint Conference on (pp. 3042-3049). IEEE.

- Chandrasekaran S., & Song I. (2016) Sustainability of big data servers under rapid changes of technology. In: Kim K., Joukov N. (eds) Information Science and Applications (ICISA) 2016. Lecture Notes in Electrical Engineering, vol 376. Springer, Singapore. doi: 10.1007/978-981-10-0557-2_15

- Tam N.T., & Song I. (2016) Big data visualization. In: Kim K., Joukov N. (eds) Information Science and Applications (ICISA) 2016. Lecture Notes in Electrical Engineering, vol 376. Springer, Singapore. doi: 10.1007/978-981-10-0557-2_40

- Song, I. (2015, July). Diagnosis of pneumonia from sounds collected using low cost cell phones. In 2015 International Joint Conference on Neural Networks (IJCNN) (pp. 1-8). IEEE. doi: 10.1109/IJCNN.2015.7280317

- Song I. (2015) Gaussian Hamming Distance. In: Arik S., Huang T., Lai W., Liu Q. (eds) Neural Information Processing ICONIP 2015 (pp. 233-240). Lecture Notes in Computer Science, vol 9491. Springer, Cham.

Further Information

JCU Research Profile

Dr Shailey Chawla

Lecturer Information Technology
James Cook University (Singapore)

PhD Computer Science, University of Delhi, India
BSc Applied Science, University of Delhi, India

Background

Dr Shailey Chawla specializes in the field of Software Engineering. She has more than 15 years of experience as an academic in both teaching and research. Dr Chawla has taught various subjects of computer science to postgraduate and undergraduate students in Singapore, Hong Kong and India. Her primary areas of interest have been programming, data structures, database management and agile development.

Dr Chawla worked as a Postdoctoral Fellow at The Hong Kong Polytechnic University, where her area of research was fields. She helped mentor other PhD students and research staff during her tenure there, focusing on data mining and Internet of Things research for smarter cities. Currently, her research interests are block chain and secure agile development.

Areas of expertise

- Requirements Engineering

- Agile Development

- Big Data Analysis

- Block chain development

Impact of research

- Developed a goal oriented requirements analysis model for creating web applications so that the applications are aligned to stakeholder expectations and require fewer iterations. This model bridges the gap between the web designer and stakeholder visualizations of the web application specially focusing on the non-functional aspects of the application.

- Elucidated different programming platforms for big data analysis focusing on the specific features each platform provides and their adaptability towards different applications.

Top five publications

- Cao, J., Chawla, S., Wang, Y., & Wu, H. (2017). Programming platforms for big data analysis. In A. Y. Zomaya, & S. Sakr (Eds.). Handbook of Big Data Technologies (pp. 65-99). SpringerLink. doi:10.1007/978-3-319-49340-4

- Chawla, S., Srivastava, S., & Bedi, P. (2016). Improving the quality of web applications with web specific goal driven requirements engineering. International Journal of System Assurance Engineering and Management, 8(Suppl 1), 65-77. doi:10.1007/s13198-015-0385-z

- Chawla, S., Srivastava, S., & Bedi, P. (2015). A qualitative forward reasoning approach for evaluation of WebGRL diagrams. Journal of Information and Systems Management, 5(1), 1-15.

- Chawla, S., Srivastava, S., & Bedi, P. (March, 2014). Evaluation of web-specific goal oriented requirements language models with quantitative reasoning. ACM SIGSOFT Software Engineering Notes, 39(2), 1-9. doi:10.1145/2579281.2579295

- Chawla, S., Srivastava, S., & Malhotra, D. (2013). Goal based requirements analysis using WebURN. International Journal of Computer Information Systems and Industrial Management Applications, 6, 248 - 256.

Further Information

JCU Research Profile

Information Technology teaching programs at James Cook University

The Singapore campus of James Cook University offers undergraduate and postgraduate programs in Information Technology and Game Design. As an IT student, you will be entitled to membership with two professional bodies: The Institute of Electrical and Electronics Engineers (IEEE) and the Singapore Computer Society (SCS).

Bachelor of Information Technology

This course brings together the knowledge and skills that are essential for professional IT careers along with subjects in interactive visualisation, games, big data and data mining, interactive 2D/3D graphics and web technologies, mobile technologies, programming and design thinking, and programming.

This course is accredited by the Australian Computer Society (ACS). Graduates are eligible to apply to join the ACS.

Bachelor of Information Technology graduates will be able to:

• Demonstrate essential knowledge for a career in technology related professions and practice;

• Synthesise industry standard and underlying principles and concepts for decision making;

• Critically evaluate data & resources in the context or relevant academic literature;

• Apply critical thinking to address IT related issues;

• Demonstrate the ability to work collaboratively

For further information on our courses, email admissions-singapore@jcu.edu.au or visit www.jcu.edu.sg

Master of Information Technology

Our Master of Information Technology program provides practical and relevant skills to allow graduates of different disciplines to move into the IT industry. Students have an opportunity to specialise in Business Informatics, Computing and Networking or Interactive Technologies and Games Design.

In the expanding e-Business/e-Commerce industry, there is a growing global demand for graduates skilled with a mix of marketing, management, internet, multimedia, computing, networking, software technologies and business operation skills.

Our Master of Information Technology program is fully accredited by the Australian Computer Society at the 'Professional Level' (its highest level).

Doctor of Philosophy (PhD) and Master of Philosophy

The Doctor of Philosophy (PhD) is a program of supervised original research. It culminates in the submission of a thesis that demonstrates the ability for critical analysis and research that makes a significant and original contribution to the knowledge and understanding of the field of study.

The Master of Philosophy offers postgraduate research supervision on a smaller scale than the PhD, towards which it can provide a pathway.

IT Activities @JCUS

The IT department offers lots of activities for the students to experience and engage with the industry while studying at James Cook University in Singapore. Aspects of the curriculum require students to work with industry on real-world projects. Guest lectures from industry experts, academicians and practitioners are conducted during the course of study to enhance the subject knowledge of students and expose them to the applications of their knowledge from time to time. There are various other special events organized like Game Jam and Hackathons wherein students from other universities and institutions also participate and compete. The students meet their peers and relevant personalities from the industry for valuable feedback and networking. Another regular two-day event is Design Sprint which is conducted at the end of term. This event is based on the Google Ventures Design Sprint methodology where our students work in randomly allocated teams across various levels of study and collaborate to develop a design solution for a real-world problem posed by industry.

Your Local Representative: