



S²ERC Showcase

Researcher/Presenter Biographies

Pekka Abrahamsson



Dr. Pekka Abrahamsson works as a full professor of information systems and software engineering at University of Jyväskylä in Finland. He received his PhD on Software Engineering in 2002 from University of Oulu. His research is in the area of new & emerging software technologies, empirical software engineering, software startups, and ethics of artificial intelligence. Prior to his current position he has served as full professor in University of Helsinki (Finland), Free University of Bolzano (Italy), Norwegian University of Science and Technology (Norway). He worked also at VTT Technical Research Centre of Finland as a research professor of software technologies. He has published broadly in his fields of expertise and received many awards and recognitions. He received the Nokia Foundation Award in 2007, Aminer.org selected him as Top-100 Most Influential Scholar in software engineering in 2016 and he co-authored the best paper of 2018 in Journal of Systems and Software. He is the co-founder of the Software Startup Research Network (SSRN) and a seasoned expert in leading large research projects.

Huseyin Ergin



Huseyin is an assistant professor of the Computer Science Department at Ball State University, Muncie, Indiana. He pursued his Ph.D. at the University of Alabama, his M.Sc. at Sabanci University - Turkey, and his BS.C. at Yeditepe University - Turkey, all in computer science degrees. His expertise areas are software engineering, model-driven engineering, and model transformation. He worked in various industries as a software developer including the R&D department at Huawei Telecommunications, the IT department at Mercedes-Benz US International, a smart shopping assistant startup called Mona, and a wedding ring manufacturing company called Benchmark. His software projects in these companies gave him an extensive look at the software development practices in various settings. He has been in the organization committee of successful local programming, scientific, and robotics competitions and camps. Lately, he is closely working with industry partners on software engineering techniques and practices. He is teaching software engineering classes and supervising software projects for local community partners, including startups, non-profits organizations, university branches, and local companies. He is also the director of Capstone Connector, which is a program under the Innovation Connector of Muncie to connect industry partners with student Capstone teams.

Tapio Frantti



Tapio Frantti holds degrees of MSc, LicTech and Dr. Tech. from the Department of Automation and Information Technology, University of Oulu. He is also an Adjunct Professor in the University of Oulu. He has worked at the Outokumpu Polarit Oy, University of Oulu, Nokia Telecommunications, and Nokia Mobile Phones as a researcher, senior researcher, chief engineer, and research manager. He has also worked in Technical Research Centre of Finland as a chief research scientist and Research Professor and as Visiting Professor in Tokyo Denki University. Lately he has been working in Renesas Mobile Europe and Broadcom Communications Finland as a distinguished researcher and research leader, in IoLiving Ltd. as CTO and in University of Oulu as a Co-Director of Security and Software Engineering Research Center. He also works in FRE company doing

security and control engineering consultation. He has been on the field about 20 years and he has published +100 scientific and technical papers in journals, magazines, books and international conferences. The most of the publications consider adaptive and intelligent control algorithms in handheld devices, communication, electronic production, power plant, household, and health systems. He has also authored several adaptive and intelligent control patents. Tapio Frantti also acts as a regular reviewer in international conferences and 12 scientific top rated journals and he is a member of Technical Program Committees in tens of international conferences. His research interests are in the adaptive and intelligent control theory, networking technologies and cyber security.

Rebecca Hammons



Dr. Rebecca Hammons has extensive technology industry experience in establishing and leading software quality assurance, product development lifecycle services, and project management teams. Strengths include technical leadership, process improvement and automation, predictive analytics for software, and strategic planning. She is an Associate Professor and Associate Director of the Center for Information and Communication Sciences, a technology master's program at Ball State University. Dr. Hammons has over forty years of experience in the software industry. She has worked for Ontario Systems, Apple, Raytheon, Tivoli Systems, Double-Take Software, and Wang, in addition to several niche software firms. She is a Certified Quality Manager and Certified Software Quality Engineer with the American Society for Quality (ASQ) and a Certified Scrum Master and Certified Scrum Product Owner with Scrum Alliance. Dr. Hammons teaches Product Management, the Design of the User Experience/Human Factors, Human Communications Theory and Practice, Software Quality Assurance, Management, and other courses relevant to successful software and technology industry practice. She is Co-Chair of the IEEE IoT Initiative Smart Cities Working Group, Chair of the Global Cities Teams Challenge Ethics Action Cluster (NTIA/NIST), guest editor of the IEEE IoT Magazine, and Chair of the Internationalization Taskforce for the College of Communication, Information and Media at Ball State University. Her current research is centered on ethical policies and practices for smart cities. Dr. Hammons has represented several industry members in S2ERC over a 20-year period and was the Industrial Advisory Board Chair in the mid-2000's and currently serves the center as one of its co-Directors.

Lauri Haverinen



Lauri Haverinen is a Master's student at University of Oulu and is currently working as a research assistant at Oulu University Secure Programming Group.

Marko Helenius



Dr. Marko Helenius is University Teacher at Tampere University of Technology, Tampere, Finland. He completed his master's thesis in 1994 and during that time he started assessing computer antivirus product's virus detection capabilities. Computer antivirus vendors valued the assessments because of their accuracy and detailed data. He completed his Ph.D. from University of Tampere in 2002. After that he became interested about information security in general and usable security in 2006. He has been active in many national research programs obtaining research funding including Future Internet, Cloud Software, Internet of Things, Need4Speed and Cyber Trust. He is responsible of the master's degree program in information security.

Tom Hill



Thomas Hill became a Partner in the Fellows Consulting Group in 2010, when he retired as the Director of Fellows and Distinguished Engineering programs after 40 years with Electronic Data Systems and HP. He has served as a Systems Engineer since becoming an Air Force computer officer in 1963. In addition to fulfilling his professional obligations, Tom is a volunteer instructor in the University of Texas at Dallas RE lab, mentors PhD students and continues to take graduate courses. He currently serves on the engineering boards of TCU and the University of Texas at Dallas. He has a 1963 TCU BS in business, a 2000 UD MBA in Information Technology, a 2014 UTD PhD in Software Engineering, Microsoft certifications and an Open Group architecture certification. Hill has written numerous articles and publications. He holds five active patents and has six patents pending.

Linghuan Hu



Linghuan Hu received a M.S. in software engineering from the University of Texas at Dallas. He is currently a Ph.D. student in software engineering at the University of Texas at Dallas under the supervision of Professor Eric Wong. His research interests include testing internet of things, combinatorial testing, symbolic execution, and test generation.

Alexander Ilin



Alexander Ilin is Professor of Practice in the Department of Computer Science of Aalto University. He was a post-doctoral researcher funded by the Academy of Finland, Senior Data Scientist and Chief Scientist at Analyse2 (2012-2015), Machine Learning Scientist at Amazon (2016), and Senior Scientist and Head of Machine Learning at the Curious AI company (2016-2018). His research interests are in data-efficient deep learning and deep reinforcement learning, and in industrial applications of machine learning. He is an author of over 40 peer-reviewed scientific articles and his h-index is 23.

Rauli Kaksonen

Rauli Kaksonen, LicTech, is a Senior Security Specialist in the Secure Programming Group at the University of Oulu (OUSPG). His research focuses on cyber security tools and how they are used by the security community. He graduated as MSc of information engineering in 1997 and LicTech in 2001 from the University of Oulu. He was co-founder and the lead developer, later CTO, in cyber security startup Codenomicon. Codenomicon was a pioneering company providing security testing, fuzzing, and software composition solutions to its customers and its research team found the 'Heartbleed bug' and numerous other high-profile vulnerabilities. Before Codenomicon he worked as a research scientist at VTT Technical Research Centre of Finland. Later Rauli worked as Senior Director in R&D in Synopsys Inc. which acquired Codenomicon 2015. Rauli has presented different cyber security topics in both business and academic conferences, as well as on TV and Radio. He is the author of several academic papers, articles, patents, and other publications.

Igor Khokhlov

Igor Khokhlov is currently a postdoctoral research scientist at the Department of Software Engineering and Global Institute of Cybersecurity at Rochester Institute of Technology. His research interests include cyber-security, data security and quality, artificial intelligence and machine learning, and the security and usability of mobile devices. He has received the Bachelor's and Master's degrees in electronic systems from the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine, in 2007, and the Ph.D. degree in computer science from the Rochester Institute of Technology, New York,

USA, in 2020. He worked as a software developer of Windows OS and Android OS software from 2007 to 2015.

Joni Kultanen



Joni Kultanen is a MSc student in Information Systems Science and a research assistant at the University of Jyväskylä. His research interests include empirical cybersecurity, AI ethics and blockchain governance.

Gabriella Laatikainen



Gabriella Laatikainen is a postdoctoral researcher at the Faculty of Information Technology, University of Jyväskylä, Finland. She pursued her Ph.D. in Economics and Business Administration (Information Systems) at the University of Jyväskylä in 2018, her MSc. Mathematics and Computer Science at the University of Debrecen, Hungary in 2007, and her BSc. Information Technology degree at the University of Applied Sciences in Jyväskylä in 2008.

She worked also as a software developer for several years. Her current research interests encompass digital innovations, business models, cloud computing and blockchains. Her work has been published in Decision Support Systems and Journal of Systems and Software.

Shou-Yu Lee



Shou-Yu received a B.S. in Computer Science from National Tsing Hua University, Taiwan, and M.S. in Computer Science from Tunghai University, Taiwan. He is currently a Ph.D. student in Software Engineering at the University of Texas at Dallas under the supervision of Professor Eric Wong. His research interests include software engineering, software fault-proneness prediction and risk analysis, and system quality insurance.

Lan Lin



Dr. Lan Lin is an Associate Professor of Computer Science. She earned her Ph.D. in Computer Science from the University of Tennessee at Knoxville. Prior to joining Ball State, she worked as a Research Scientist in the Software Quality Research Laboratory at the University of Tennessee. Her research has focused on rigorous software specification and automated and model-based statistical testing, and has been funded by Lockheed Martin, Northrop Grumman, Rockwell Collins, Air Force Research Laboratory, and Ontario Systems (all through S2ERC), and also by NSF. Her S2ERC-funded project titled “Towards Scalable Modeling for Rigorous Software Specification and Testing” was selected to be published in the 2016 NSF Industry & University Cooperative Research Center Technological Breakthrough Compendium. Dr. Lin was appointed to be the S2ERC Director in July 2020, and will be a Program Co-Chair for the 33rd International Conference on Software Engineering and Knowledge Engineering (SEKE 2021).

Mehdi Mirakhorli



Mehdi Mirakhorli is an associate professor of software engineering and Kodak Endowed Scholar at Rochester Institute of Technology. He is the founding director of Software Design and Productivity Laboratory and a member of the Global Cybersecurity Institute at RIT. His research interests are on the intersection of Software Engineering and Cybersecurity. Dr. Mirakhorli has served as PI on grants worth over \$5 Million. Dr. Mirakhorli serves on the Editorial Board of the Journal of Software and Systems (JSS) and IEEE Transaction in Software Engineering (TSE). He is a recipient of the NSF CAREER award and multiple Distinguished/Best Paper Awards.

Tien Nguyen



Dr. Tien N. Nguyen is currently a Full Professor in the Computer Science Department at the University of Texas at Dallas (UTD). His research interests include program analysis, software security, machine learning for software engineering and programming languages, software mining, and software maintenance and evolution. Since 2009, he has been awarded 4 ACM SIGSOFT Distinguished Paper Awards, one Best Paper Award, and one best ICSE Formal Research Demonstration Award, one Most Impact Paper Award at the top-tier, international software engineering conferences including ICSE, FSE, and ASE. Since 2005, his research has been supported by 14 external grants including 8 NSF grants from US National Science Foundation (PI on 5 of them), and several grants from industry including ABB Software Research Grant Program, Litton Industry, IBM research, and Agile Alliance Academic Program. He has served as the Program Co-Chair of the 32nd ACM/IEEE International Conference on Automated Software Engineering (ASE 2017), and 4 times as the Chair of the Formal Demonstration Tracks at ICSE and FSE. He has served on Program Committees and Program Boards of top-tier software engineering conferences including ICSE, FSE, ASE, OOPSLA, ECOOP, and ICSME. He was awarded the Litton Professorship Medallion Award from Iowa State University in 2008 for young faculty who exhibits excellent leadership in research and teaching.

Ella Peltonen



Dr. Ella Peltonen is a research scientist with the Center for Ubiquitous Computing, University of Oulu, Finland. She gained her PhD at the University of Helsinki and did her postdoc period at the Insight Centre for Data Analytics, University College Cork, Ireland. In addition, she has undertaken research visits to University of California, Berkeley, US, University of Cambridge, UK, University College London, UK, and University of Melbourne, Australia. Her research focuses on pervasive everyday sensing, edge-native machine learning, and “from data to actions” including ubiquitous recommendation systems and data analytics. Dr. Peltonen has been granted Marc Weiser Best Paper Award in the IEEE PerCom 2015, Rising Stars in Networking and Communications 2017 by N2 Women, The European Initiative EPIC Grant 2018, and Nokia Foundation Jorma Ollila Grant 2018. She is a member of the ACM Future of Computing Academy.

Susanna Pirttikangas



Susanna Pirttikangas, D.Sc. (tech.), 2004, M.Sc. (math), 1998 leads the Interactive Edge research group and several digitalization/data analytics projects for different industries at the University of Oulu. Dr. Pirttikangas made her postdoctoral visits to Waseda University, Japan (2005-2006), Tokyo Denki University, Japan (2008) and Tsinghua University, China (2011), doing research on methodology to de-noise, fuse, segment, and analyse real-time data streams with a focus on creating situation awareness for more informed and ethical decision making. She has worked as a business developer and as a data scientist for industry and consults companies on artificial intelligence maturity and application of AI in their business. She is the community builder for SuperIoT AI DIH.

Bilhanan Silverajan



Bill Silverajan is a Doctoral Researcher from the Networks and Information Security Group at Tampere University. His research interests lie in the crossroads of communication, networking, and security. For the past 15 years, these have been applied in the domain of IoT device and network security, edge computing, trust and the security of autonomous systems particularly in the context of maritime cybersecurity. He is also an active contributor in standards organization, particularly the Internet Engineering Task Force (IETF).

Petra Söderling



Petra Söderling is a Senior Advisor at Business Finland, the Government Funding Agency for Research and Technology Development in Finland. Business Finland serves under the Finnish Ministry of Employment and the Economy. Ms. Söderling has built her career in Technology and Innovation in dynamic international corporate environment, as well as being an entrepreneur. She has successfully launched two startup companies, one in Mobile App Development and one in Real Estate Technology. For over a decade Ms. Söderling served at various senior positions at Nokia, including Head of Open Source, Head of Technology Marketing, and Director of Product Development for Nokia Smartphones. Ms. Söderling sits on the IT Advisory Committee of Herzing University in New Orleans, LA, and has been granted several Innovation and Design Awards including Red Dot Best of the Best. She holds a Bachelor of Business degree from Helia University of Applied Sciences, and a Master of Business Administration from Helsinki University of Technology. Ms. Söderling also completed Executive Education at Harvard Business School in Strategic Finance and Stanford University in Innovation.

Xin Sun



Dr. Xin Sun is an Assistant Professor in the Computer Science Department at Ball State University. In summer 2014 he was a visiting researcher at IBM Watson Research Center. He received his Ph.D. from Purdue University, West Lafayette, in 2012. The overarching goal of his research is to create rigorous scientific approaches and automated software tools for managing and securing large and complex cyber-infrastructures, which today are kept running mostly by manual efforts and thus prone to human errors. Dr. Sun is passionate about Computer Science education and loves working with students. He is a recipient of the Computer and Information Science and Engineering Research Initiation Initiative (CRII) Award from National Science Foundation (NSF), and his research has been funded by NSF, S²ERC, and the State of Florida.

Teemu Tokola



Teemu Tokola has worked at the Oulu University Secure Programming Group (OUSPG) since 2004. His work at the OUSPG has focused on teaching and dissemination, with latest projects related to Europe-wide collaboration on cybersecurity education and dissemination, Finland-wide collaboration on improving cyber security teaching at universities to better cater to industry needs and on development of cybersecurity courses and making cybersecurity curriculum planning for the University of Oulu. His additional teaching and research interest areas include development of effective systems for providing support for Bachelor level thesis writing, teaching of programming and software engineering skills, black-box modelling, computer architectures, artificial intelligence and natural language processing.

Shaohua Wang



Dr. Shaohua Wang is an Assistant Professor in the Department of Informatics at New Jersey Institute of Technology. He received his Ph.D in Computer Science from Queen's University, Canada in May 2016. His research lies the intersection of Software Engineering, Program Analysis, and Artificial Intelligence. He aims to build AI-based solutions to improve software quality, reliability, and intelligence. Particularly, his current research interests include, but not limited to, bug detection, automated program repair, testing, vulnerability detection, and interpretable and explainable models.

Eric Wong



W. Eric Wong received his Ph.D. in Computer Science from Purdue University. He is a Full Professor and the Founding Director of Advanced Research Center for Software Testing and Quality Assurance in Computer Science at the University of Texas at Dallas. He also has an appointment as a guest researcher at the National Institute of Standards and Technology. Dr. Wong was the recipient of the 2014 IEEE Reliability Society Engineer of the Year. He is also the Edit-in-Chief of IEEE Transactions on Reliability. His research focuses on software testing, program debugging, risk analysis, safety, and reliability.

Shaoen Wu



Shaoen Wu is the State Farm Endowed Chair Professor and the Director of the Center for Cybersecurity Research and Education (C2RE) at Illinois State University. He received his PhD degree in Computer Science and Software Engineering from Auburn University. He is a senior member of IEEE, the Vice Chair for North America of IEEE MMTC 2020-2022, and a member of ACM. He worked for Ball State University 2013-2020 where he served on the Director of Security and Software Engineering Research Center (S2ERC), the Advisory Council of Scholarship for the Vice Provost for Research, the Dean's Faculty Advisory Board and the assistant department chair of computer science. He also worked as an assistant professor in the School of Computing at University of Southern Mississippi, a Staff Scientist at ADTRAN, and a Member of Technical Staff at Bell Labs, Lucent Technologies. He has published over 85 peer-reviewed papers in wireless, IoT, smart health and robotics at international journals e.g. IEEE Internet of Things Journal and conferences e.g. IEEE Globecom, ICC and ICCCN. His research has been generously supported over \$3M by NSF, NASA, AFRL, Lockheed Martin, Cisco, NVIDIA, Intel, Dell, ARM, Cypress Inc. and Microsoft. He has received three Best Paper Awards including one from IEEE GC'19, a Faculty Excellence Award, and a First Place in Graduate Student Forum. He has actively served as a Chair/Co-Chair at several international conferences and an editor for a few prestigious international journals.