

KASHUMI MADAMPE PhD in Software Engineering (about to complete)

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Summary

- Dedicated, data-driven, and collaborative problem-solver; passionate about human-AI interaction
- About to complete PhD in Software Engineering (human, social, and technical aspects) at Monash University, Australia
- 7+ years of mixed-methods research experience (including 3+ years of academic research and 4+ years of industry research)
- 4+ years of business analysis, stakeholder management (USA, Canada, Australia), product management (integrated and standalone), and project management, and team management experience in the software industry

Industry Experience

Project Manager cum Business Analyst – myDigitalOffice (May 2016 - Jan 2019)

Domains of the projects: Quality Management, Task, and Time Tracking, Human Resources, Hospitality domain – business dashboards, paperless night audit systems.

- **Design research:** Conducted generative and evaluative research using design thinking through interviews, brainstorming sessions, identified gaps, analysed collected data to inform product designs, did wireframing and high fidelity prototyping
- **Business analysis:** Captured businesses, elicited, documented, and tracked requirements and managed changes, developed epics, user stories, use cases, software requirements specifications, drew UML diagrams such as sequence diagrams, use case diagrams, data flow diagrams, involved in drawing architecture diagrams, conducted user acceptance testing (UATs), ensured accurate requirement implementation through requirements traceability matrix, tracked bugs, conducted client demos
- **Stakeholder management:** Collaborated with clients in the USA, Canada, and Australia daily through online meetings by providing updates and identifying their needs, and defined SLAs with clients
- **Software product and project management:** Product owner of the products, used agile (Scrum, Kanban) and hybrid methods, defined scope with stakeholders and tech leads in the teams, defined tasks through work breakdown structure, Gantt charts, defined KPIs, conducted effort estimation with the team, tracked effort/cost, ensured successful product delivery
- **Engineering and Operations team management:** Managed distributed teams, conducted daily stand-ups and retrospectives, ensured timely task completions and product deliveries, involved in recruiting essential talents
- **Business process optimisation:** Researched new technologies, project management aspects, and refined processes within projects and the company to optimise the current practices through automation. These were adopted by the company and led to an increase in the productivity of the team

Results: All products were successfully implemented and are currently being used by numerous users, business capturing led to company partnerships, and pioneered in increasing the headcount of the company.

Systems Analyst Intern – SriLankan Airlines (Nov 2015 - May 2016)

Domain of the project: HR Systems and Administration.

- **User research:** Conducted interviews, observed users, and researched the new developments in the industry especially for HR-related systems and suggest those features to enhance the user experience and productivity
- **Business process optimisation:** Studied and familiarised with current business processes together with related systems and practices in the HR Administration area to propose solutions for the improvement of the efficiency of the HR Systems and Administration section, reviewed and validated the outcome with key process owners
- **Process refinement and automation:** Extensively studied all areas in HR Systems and Admin section to find possibilities of automation of work processes and identify optimisations required in existing automated work processes
- **Gap analysis:** Identified gaps in the present practices and processes against industry best practices and regulations and came up with improvements to address the identified gaps in the current system
- **Data analysis:** Identified in-system data and off-system data, and analysed them and in discussion with the respective subject-matter expert to devise actions and resolutions to correct them
- **End user support:** Maintained the issue log and provided system support to end users for *Leave, Time and Attendance, Performance Appraisals* modules
- **User manual preparation:** Prepared user manuals (documents) for *Leave application, Time and Attendance, Reporting Hierarchy and Performance Appraisals*

Results: This internship was done as a part of my undergraduate degree. The findings were presented to the company for implementation.

Trainee Business Analyst – Nibaya (Nov 2014 - Nov 2015)

Domains of the projects: GPS Tracking, POS, Oil and Gas, Transportation

- **Business analysis:** Researched similar systems existing in the industry which tally with the systems to be developed, analysed systems to be developed and the existing systems to be replaced in order to identify the gaps, developed user stories, use cases, software requirement specification, tracked bugs
- **User manual preparation:** Prepared user manuals in the form of videos and documents
- **UI design:** Designed user interfaces
- **Project management:** Assisted project management tasks

Results: The products were successfully delivered to the clients.

Academic Experience

Main Supervisor: R & D projects of final year undergraduate students – Monash University, Australia (July 2020 – Nov 2021)

- **Supervised 9 final year undergraduate students (2 teams):** Guided them through a design thinking approach. One team developed the tool (a Trello power-up for emotion capturing and monitoring in agile teams) and the other team evaluated the tool.

Results: The first publication is available in the Journal of Systems and Software.

Research Assistant – The University of Auckland, New Zealand (Mar 2019 – Dec 2019)

- **Data collection:** Conducted in-person interviews with C-level executives (for Business School)
- **Data analysis:** Analysed qualitative data using Strauss-Corbinian Grounded Theory, and quantitative data using statistics (descriptive, regression, trend)

Results: Collected and analysed data were used to write business cases for the business school, and a publication on the role of Scrum Master.

Graduate Teaching Assistant (July 2019 – Nov 2019)

- **Electrical and Digital Systems:** Marking, Exam invigilation
- **Agile and Lean Software Development:** Marking, exam invigilation, student coordination, liaised with industrial partners

Education

PhD in Software Engineering – Monash University, Australia (Jan 2019 – July 2022)

Transferred from The University of Auckland, New Zealand in Jan 2020 as a second-year PhD candidate

Thesis: Understanding requirements changes in software development.

Objectives: Understanding the multi-faceted nature of requirements changes, understanding emotional responses to requirements changes, understanding the role of emotional intelligence in handling requirements changes.

- **Research objective and question definition:** Used a grounded theory approach to identify key issues in the industry that need addressing, defined research objectives and questions to meet the objectives
- **Research design:** Designed empirical studies using mixed-methods approaches to answer research questions
- **Protocol development:** Developed survey questionnaires, pre-interview questionnaires, and interview guides, prepared advertisements and documents explaining the nature of the project to gauge interest in potential participants
- **Participant recruitment:** Recruited participants via social media, Amazon Mechanical Turk
- **Data collection:** Used convenient sampling, theoretical sampling, and random sampling and conducted in-person and online interviews, and surveys
- **Data analysis:** Analysed qualitative data using Strauss-Corbinian Grounded Theory, and Socio-Technical Grounded Theory, and quantitative data using statistics (descriptive)

Results: A taxonomy of requirements changes in agile contexts, theoretical frameworks on emotion dynamics, emotion-centric requirements change handling, and emotional intelligence, recommendations for software engineers including a tool, a decision guide, and a problem-solution chart to better handle requirements changes.

All results are available in 8 publications (6 published/accepted for publication, 2 under review) at Q1 software engineering venues including *IEEE Transactions on Software Engineering* which is the #1 ranked software engineering journal. Conference papers were presented at the respective conferences via oral presentations. The preprints of the publications are available at <https://kashumim.com/publications>

BSc (Special) in Computing and Information Systems – Sabaragamuwa University of Sri Lanka (Oct 2011 – Mar 2016)

First Class

Thesis: Business Process Optimisation of HR and Administration.

Objective: Optimising the business process of HR systems and administration.

- **Data collection:** Conducted interviews and observations
- **Data analysis:** Analysed data using thematic analysis

Results: This is connected to the internship done at SriLankan Airlines. This led to winning a best performance award at the final defense at the university.

Mini project: Research on Brain Computer Interface.

- **Data collection:** Used an existing EEG dataset
- **Data analysis:** Analysed the data using Machine Learning techniques

Results: Findings were presented as an oral presentation and a research paper.

Other Courses Followed

- **Project management:** PMP/CAPM Preparation Course (PMBOK 5th Edition)
- **Networking:** CCNA Exploration (version 4.0) Course

Skills and Technical Competency

Project Management and Business Analysis Skills

- **Documentation and specification:** project documents, technical write-ups, end user manuals
- **Analysis techniques:** user stories, use cases, as-is analysis, to-be analysis, gap analysis
- **Visual modelling:** sequence diagrams, use case diagrams, work-flow diagrams, wireframes, high fidelity prototypes
- **Project management skills:** project plan, work breakdown structure (WBS), effort/cost estimation, scheduling, change control management
- **Business process modelling:** business process model and notation (BPMN)

Research Skills

- **Participant recruitment:** Experienced with recruiting participants from Amazon Mechanical Turk
- **Data collection techniques:** Interviews, surveys, observations
- **Data analysis techniques:** Grounded Theory, thematic analysis, statistical analysis

Technical Competency

- **Familiar languages:** Python (currently using for data analysis), Matlab, Java, JavaScript, HTML, MySQL
- **Familiar IDEs:** Visual Studio Code, Spyder, Matlab, NetBeans
- **Version controlling tools:** GitHub, Tortoise SVN
- **Project management tools:** Jira, Trello, Microsoft Project, Mindjet, Bitrix24, Producteev, Kanbanflow, TeamWork
- **Data analysis tools:** NVivo, MAXQDA, Dovetail, Microsoft Power BI, Tableau
- **Visual modelling tools:** IBM Rational Rose Enterprise Edition, Microsoft Visio, Balsamiq Mockups, Sketch

Achievements and Awards

Monash University, Australia

- International Postgraduate Research Scholarship awarded by Faculty of Information Technology

University of Auckland, New Zealand

- Colombo Plan in Engineering Scholarship awarded by Faculty of Engineering in 2019
- Student Support Award awarded by Faculty of Engineering in 2019
- Finalist at Exposure - Postgraduate Research Competition in 2019

Sabaragamuwa University of Sri Lanka

- One of the Best Performer Awards at final year defense in 2016

Microsoft Corporation

- Awarded as one of the top 10 application development experts in Microsoft Learning in Sri Lanka in 2013
- Awarded as one of the top 10 infrastructure experts in Microsoft Learning in Sri Lanka in 2013

Hackathon and Competition Participations

Hackathons

- Spiration Hackathon World Conference on Youth in 2014
- Women's Hackathon Microsoft and US Embassy of Sri Lanka in 2014

Competitions

- Visualize Your Thesis - Competed at University Level Monash University in 2020
- Exposure - Postgraduate Research Competition by University of Auckland in 2019
- Security Quiz by Sri Lanka Computer Emergency Readiness Team (SLCERT) in 2014
- Microsoft Tech Elite - South Asian region by Microsoft Learning Academy in 2013

Voluntary Work

- Serving as a peer reviewer, program committee member, and organising committee members at multiple journals and conferences. Details are available at <https://kashumim.com/services>
- Volunteered as a UN volunteer at public events in Sri Lanka such as Galle Literary Festival, Galle Children's Festival, Social Integration Week, Commonwealth Youth Unite, World Space Week from 2013 to 2016