Sangeeta **Dey**

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Summary

I am currently pursuing PhD in Artificial Intelligence at Ajou University. My research interests include intelligent software engineering, requirements engineering, training data quality assurance, and reasoning about uncertainty. I completed my MS in Computer Engineering at Ajou University in 2015. My masters thesis was on requirements elicitation of socio-technical systems using cognitive tools. I have almost 3 years of work experience as a systems engineer at Tata Consultancy Services in India. My responsibility as a software developer in the company mainly involved customization of the Product Lifecycle Management tool Teamcenter modules using C++, Java, and Perl.

Education

Pursuing PhD in Artificial Intelligence

Suwon, S. Korea

Ajou University — *Sep. 2018 - Present*

- **Advisor:** Prof. Seok-Won Lee
- **Lab:** Knowledge-Intensive Software Engineering (NiSE) Lab
- **Thesis (Proposed):** Evidence-driven Data Requirements Engineering and Data Uncertainty Assessment for Machine Learning-based Safety-critical Systems
- **Grade Point Average (GPA):** 4.45 out of 4.5

MS in Computer Science and Engineering

Suwon, S. Korea

Ajou University — *Sep. 2013-Aug. 2015*

- **Advisor:** Prof. Seok-Won Lee
- **Lab:** Knowledge-Intensive Software Engineering (NiSE) Lab
- **Thesis:** Requirements Elicitation for Adaptive Socio-technical Systems using Repertory Grid:A Cognitive Approach
- **Grade Point Average (GPA):** 4.44 out of 4.5

BS in Computer Science and Engineering

Kolkata, India

Netaji Subhash Engineering College — *Aug. 2006-July. 2010*

- **Final year Project:** School Management Software for Techno India Group
- **Degree Grade Point Average (DGPA):** 8.64 out of 10

Research Experience

PhD Research Assistant

Suwon, S. Korea

Department of Artificial Intelligence, Ajou University — *Sep. 2018 - Present*

- Software engineering for AI-based systems
- Quantification of uncertainty
- Machine learning training data quality assurance
- Multi-layered framework for data requirements engineering

MS Research Assistant

Suwon, S. Korea

Department of Computer Science and Engineering, Ajou University — *Sep. 2013 - Aug. 2015*

- Requirements engineering
- Software design
- Develop automated tool for requirements analysis
- Design methodology to use cognitive tool repertory grid to elicit and analyze requirements of socio-technical systems
- Empirical study on requirements elicitation using repertory grid

Publications

International Journal

2017 **Information and software technology**, Dey Sangeeta and Seok-Won Lee. “REASSURE: Requirements elicitation for adaptive socio-technical systems using repertory grid.” 87 (2017): 160-179.

2021 **Journal of Systems and Software**, Dey Sangeeta and Seok-Won Lee, “A Multi-layered Review of Safety Approaches in the Days of AI”.176 (2021): 110941.

International Conference and Workshop

2015 **IEEE, Requirements Engineering Conference (Acceptance rate: 19%),** Dey Sangeeta and Lee Seok-Won. "From requirements elicitation to variability analysis using repertory grid: A cognitive approach."

2019 **IEEE, Requirements Engineering Conference Workshop (REW),** Kim MinJu, Dey Sangeeta, and Lee Seok-Won. "Ontology-Driven Security Requirements Recommendation for APT Attack."

2022 **ACM/IEEE, International Conference on Software Engineering: NIER (Acceptance rate: 26%),** Dey Sangeeta and Lee Seok-Won. "Are we training with the right data? evaluating collective confidence in training data using Dempster Shafer theory."

2022 **IEEE, Requirements Engineering Conference (Doctoral Symposium),** Dey Sangeeta and Lee Seok-Won. "Evidence-driven data requirements engineering and data uncertainty assessment of machine learning-based safety-critical systems."

2023 **ACM/SIGAPP Symposium on Applied Computinge (Acceptance rate: 23.8%),** Dey Sangeeta and Lee Seok-Won. "From requirements elicitation to variability analysis using repertory grid: A cognitive approach."

Awards and Patent

- Lee Seok-Won, and Dey Sangeeta. "Need supporting means generating apparatus and method." **US. Patent No. 10621165.** 14 Apr. 2020.
- Brain Korea (BK-21) scholarship during MS and PhD Program, 2013-2015, 2018-2022
- Special Graduate Scholarship as an outstanding student during PhD (2018-present).
- Graduate Scholarship "A" as a top-performing student during MS (2013-2015).
- Appreciation award for conducting outstanding training sessions for customers at Tata Consultancy Services (2012).

Professional Employment

Systems Engineer *Bangalore, India*

Tata Consultancy Services *Sep. 2010 - Jun. 2013*

- Integration of different CAD (Computer Aided Design) and CAE (Computer Aided Engineering) software with a PLM Tool Teamcenter (Developed by Siemens). Configuration changes (E.g. XML File editing, batch file writing using Perl) were required to do this integration.
- Customizing the already existing functionalities of Teamcenter using C++ and JAVA to meet the customer's business needs.

Teaching Assistant *Suwon, S. Korea*

Ajou University *Sep. 2013 - Aug, 2015, Sep. 2018 - Present*

- Guide undergraduate students to complete assignments and projects on Data Structure and Algorithms. **(Course: Data Structure and Algorithms, Instructor: Prof. Adil Mehmood Khan)**
- Guide undergraduate students to perform requirements analysis, software architecture, and detailed software design for desktop and Android. **(Course: Software Engineering, Instructor: Prof. Christin Chung)**
- Conduct hands-on practical sessions for Global-IT exchange students to draw UML diagrams. **(Course: Software Engineering, Instructor: Prof. Seok-Won Lee)**
- Assist undergraduate students in designing software by analyzing operational domains. **(Course: Domain Analysis and Software Design, Instructor: Prof. Seok-Won Lee)**

Technical SKills

- Microsoft Office Programs and LATEX
- Operating Systems: Windows, Linux
- Programming Language: Java, Python, JSP, PHP, C++, Javascript, Perl, MatLab, R.
- Tools: Matlab (Simulation), Repertory Grid, Teamcenter, IBM Rational Software Modeler

References

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