Ali Sedaghatbaf

Consultant

- 28 April 1987
- Litteraturgatan 210, 42247 Gothenburg, Sweden
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Skills

OpenAI, Llama, LangChain

Django, Flask, Streamlit

Scrum, SAFe

MS Azure

Tensorflow, Pytorch, Keras, Spark

JavaScript, Express, React

Java, Python, SQL, Cypher

About Me

With a PhD degree in software engineering backing me up, I have 5+ years of experience in software engineering, safety/security analysis and machine learning. I approach new problems with an analytical and collaborative mindset. In my career, I am used to work closely in a Nordic team setting with other scientists and engineers as well as communicate on complex topics with stakeholders.

Education

2013-2018	Ph.D. in Computer Science	IUST, Tehran, Iran
	A Framework for Modelling and Evaluation of the Quality Attributes of Software Architecture	
2009-2011	M.Sc. in Computer Science	IUST, Tehran, Iran
	Cyber Security Evaluation Based on Attacker Behavior Modelling	
2005-2009	B.Sc. in Computer Science	IUST, Tehran, Iran
	A Software Tool for Remote App Configuration	

Experience

2024 — Cyber Security Consultant — SystemWeaver, Gothenburg, Sweden

- Helped automotive customers with ISO 21434/UNR155 certification and risk analysis (TARA).
- Developed a GenAI application for risk analysis automation (Python/Streamlit, Neo4j/Cypher, OpenAI, LLama)
- Participated in conferences and workshops in AI and security.

2023 — Attribute Leader — Volvo Car Corporation (contract), Gothenburg, Sweden

- Enforced ISO 21434 and UNR155 by helping teams with TARA, security planning and security report reviews.
- Developed Python scripts for task automation
- Performed security risk analysis and requirement elicitation

2020-2022 — Researcher — RISE Research Institutes of Sweden, Borås, Sweden

- RISE projects on safety & security validation of vehicles.
  - Developed a faulty RGB camera for Carla (C++)
  - Developed a fault injection campaign manager (Python) for Carla/OpenPilot.
  - Used SVMs for fault space exploration in MODIFI (Java & MATLAB)
- European project IVVES (ivves.eu) on V&V of evolving systems
  - Used cGANs for test generation (Python & Tensorflow)[ABB Robotics]
  - Developed an algorithm for online stream clustering under concept drift (Python)[F-Secure]
- European project VALU3S (valu3s.eu) on V&V of safety and security
  - Used GANs and active learning for automated fault space exploration of an adaptive cruise control system (Python & MATLAB).

2018-2020 — Researcher — Mälardalen University (MDU), Västerås, Sweden

- Serendipity & SACSys projects [Volvo CE]
  - Performed formal modeling and safety/security verification of a fleet of autonomous haulers (Rebeca/Afra)
- Was a lab assistant and co-supervisor for MSc/PhD students
  - Formal Verification of safety and security properties
- AI/ML for e-health.
  - Used CNNs and RNNs (Python and Tensorflow) for human activity recognition and fall risk estimation.
  - Developed a mobile app (React) for collecting wearable sensor data

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Languages ———

Swedish

English

Persian

2016	Software Engineering Consultant	Info. Services Co., Tehran, Iran

- Privacy-preserving publishing of banking data
  – Developed an anonymization tool (Java) that could apply different privacy models (e.g. k-anonymity and l-diversity) to bank customers data (CSV/Excel files and SQL databases) and analyse the risk of privacy violation.

2012-2015	R&D Engineer	Trustworthy Computing Lab., Tehran, Iran

- Cognitive attack simulation
  – Developed a simulator for analyzing the propagation of misinformation in online social networks (Java) by taking advantage of multi-agent simulation, fuzzy cognitive maps and complex networks theory.
- A secure programming language
  – Developed a compiler for a java-like language that supported information-flow security (Java, LLVM).

2011	Software Developer	Complex Systems Analysts Matrix, Tehran, Iran

- Developed the IranRisk Website (www.iransrisk.com) using PHP and the Jumla framework

Awards and Certificates

- Specially selected paper: Giorgio Forcina, Ali Sedaghatbaf, Stephan Baumgart, Ali Jafari, Ehsan Khamespanah, Pavle Mrvaljevic, and Marjan Sirjani. "Safe Design of Flow Management Systems Using Rebeca." Journal of Information Processing 28 (2020): 588-598.

  – The complete list of my publications can be found on Google Scholar

- Python for data science and machine learning: "Hands on with python libraries e.g., pandas, numpy, sklearn, seaborn, pyspark and keras." Instructor: Jose Portilla, Udemy certificate, 2022.

- Azure Databricks: "Hands on with clusters, cluster pools and jobs in Azure Databricks, Spark SQL, data lake, data factory, delta lake, PySpark, etc." Instructor: Ramesh Retnasamy, Udemy certificate, 2022.

Interests

- Software engineering
- Cyber security
- Data Privacy
- Machine learning
- Cloud computing