Mohammad Zeeshan

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German permanent residence · Niederlassungserlaubnis
..born in Colombo, Sri Lanka

summary

Senior Software Engineer with 8+ years of full-time experience building backend, data and AI systems in Python and Java, from cloud infrastructure to web front ends, for banking, automotive and cybersecurity (Deloitte, Huawei, BMW, Samsung). Specialised in modernising and migrating large systems. At Deloitte, led the CI/CD team on a 150-million-line COBOL-to-Java mainframe migration. Earlier work includes map software for BMW's autonomous-driving programme and test automation for the Intel modem used in the Apple iPhone. M.Sc. Computer Science (Artificial Intelligence), TU Munich.

skills

Languages: Python, Java, SQL, C/C++, JavaScript, Bash, R
Cloud and DevOps: AWS, GCP (BigQuery), Docker, Jenkins, CI/CD, Git, Linux
Backend and data: Spring, REST APIs, microservices, PostgreSQL, MongoDB
AI: machine learning (gradient boosting, SVM, clustering), deep learning (CNNs), NLP, LLM-based tools

work experience {full-time}

Senior Consultant, Business Consulting 1 Jul 2022 – 31 Dec 2025
Deloitte Consulting GmbH, Munich, Germany
.. in Cloud Transformation and Systems Engineering (CTSE) Team

- Commerzbank: Designed and built a web-based AI tool that translates HiveQL scripts to BigQuery SQL for the bank's cloud migration (Python, GCP); automated 207 scripts and cut manual translation effort by 56%.
- Volkswagen: Implemented four new sales KPIs in SQL on AWS, giving the Cariad X5 team visibility into sales performance; resolved 84 production-critical defects.
- Nationale-Nederlanden: As CI/CD team lead, built the pipelines for the migration of 150 million lines of mainframe COBOL to Java, cutting release time from 2 weeks to 1 day.

Research and Development Software Engineer 1 Oct 2020 – 31 Mar 2022
Huawei Technologies, German Research Center (GRC), Munich, Germany
..employed via Hays Professional Solutions

- Built an NLP pipeline in Python that crawls, parses, annotates and classifies 100,000+ security articles into STIX objects for cyber threat intelligence, with human-in-the-loop validation that raised precision from 78% to 83%.
- Migrated the pipeline's storage from flat files to MongoDB, making all 100,000+ articles searchable in seconds.
- Turned research prototypes into production-ready code and integrated them into Huawei's in-house systems.

Software Engineer 1 Oct 2019 – 30 Apr 2020
Pentasys AG / AUSY Technologies (now Randstad Digital Germany),
on-site consultant at **BMW Group's** Research & Innovation Centre (FIZ), Munich

- Developed Java plugins for BMW's vehicle electronics toolchain, extending AUTOSAR support for ECUs, the vehicle network and Ethernet signals. Tech: Java, Docker, PostgreSQL, Git, Linux.

Senior Developer, Navigation Database Compiler 1 Feb 2018 – 31 Aug 2018
Samsung HARMAN, Navigation Center of Competence, Garching near Munich

- Developed features for the navigation database (NDB) compiler that builds HD maps for BMW's autonomous-driving programme.
- Implemented lane-restriction support and internationalised warning signs; fixed non-determinism bugs in the compiler output.
  Tech: Java, PostgreSQL, JUnit, Mockito, Maven, Jenkins, SonarQube.

Software Developer 14 Aug 2012 – 30 Sep 2014
Habib Bank AG Zürich, Dubai, UAE

- Implemented the bank's integration with UAE Central Bank's Direct Debit System in Java, replacing post-dated paper cheques for rent and utility bills with automated, recurring payments; wrote integration and load tests against the Central Bank's test environment and took the system live for the bank's customers.
- Designed and developed the framework for the bank's first hybrid mobile and web app, including encrypted login built on the bank's own key infrastructure: the first time customers could log in to the bank from a mobile device.
- Developed the bank's BOPCUS reporting system in Java, submitting cross-border foreign-exchange transactions from its South African branch to the South African Reserve Bank for Balance of Payments reporting; processed 23,000+ transactions a day, validated against the Reserve Bank's rules, with zero rejected submissions.
- Tech: Java, Spring, Vaadin, REST, T-SQL, JSP, SAP ASE, Linux.

work experience {part-time}

Werkstudent (Data Scientist) 1 Aug 2016 – 31 Jan 2017
Allianz SE, Group Operations, Global Data and Analytics team, Munich, Germany

- Trained machine learning models (gradient boosting, in R and H2O) under Dr. Gemma Garriga and measured how horizontal and vertical scaling affect model performance; presented the results at Allianz headquarters. Tech: Docker, Nomad, Git.

Werkstudent (Software Tools Developer) 15 Sep 2015 – 31 Dec 2016
Intel Deutschland GmbH, *Am Campeon*, Neubiberg, Munich, Germany
*Modem team, later acquired by **Apple**:*

- As sole developer, built multithreaded Python software that automated manual testing of Intel's XMM 7360 4G LTE modem, which shipped in the iPhone 7 and 7 Plus; used by teams in the US, China and Germany.
- Integrated the test tooling with HP Application Lifecycle Management (HP ALM) / Quality Center.

education

Master of Science Computer Science Oct 2014 – Sep 2017
Technical University of Munich, Munich, Germany

- Major in *Artificial Intelligence*, Minor in Software Engineering
  - Master's thesis: Software Architecture for Crowdsourced Idea Generation

Enrolled Visiting Student (final semester of the TUM M.Sc.) Feb 2017 – Sep 2017
Massachusetts Institute of Technology – MIT, Cambridge, USA

- Research student at MIT Center for Collective Intelligence, on campus.
- Researched XCoLab — a platform developed by the MIT Center for Collective Intelligence to power large-scale collective intelligence systems. Worked on its architectural migration from a monolithic Liferay Portal application (tightly coupled Java portlets on Liferay's ServiceBuilder ORM) to containerised microservices.
- Removed the portal lock-in caused by Liferay's weak inter-portlet communication (pre JSR-286), so that each domain feature could be deployed independently and scaled horizontally.

Bachelor of Science, Computer Science (Dean's Honor List) 2008 – 2012
National University of Computer and Emerging Sciences, Lahore, Pakistan

- Bachelor's Thesis - UML Modeler and Code Generator, in Java.
  - Generated code from UML class diagrams & vice versa as an Eclipse plugin. Used Eclipse with Java Swing & AWT API to develop a graphical editor.
- Selected coursework: Artificial Intelligence, Design & Analysis of Algorithms, Theory of Automata, Advanced Databases, Operating Systems.
- Mathematics: Linear Algebra, Probability & Statistics, Differential Equations, Discrete Structures.

awards

MIT Sandbox Innovation Fund, seed for MIT's student innovators 2017
DAAD FITweltweit research scholarship for the MIT stay 2016
Offered a visiting research internship, AI Group, International Computer Science Institute (ICSI), Berkeley 2016

ACM – Association for Computing Machinery NUCES Lahore chapter:

- Winner Young Programmer of the Year 2008, C++
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- Winner Programmer of the Year 2010, C++
- Winner Programmer of the Year 2012, C++

Winner, Ideas Xtreme - ideas competition at SOFTEC FAST NUCES 2007
Merit scholarship - Cambridge International A Levels, awarded for straight A grades in O Levels 2006
Winner, Intel IT Whiz Kid, Lahore - nation-wide computing contest 2003

languages and community

- Languages: English (fluent), German (B1), Urdu (native)
- Contributed to XCoLab (MIT open source proj.): github.com/CCI-MIT/XCoLab
- Founded RoboRumble (2012), a national robot-wars competition still held yearly at the National University of Computer and Emerging Sciences, Lahore.
- Co-founder of Desi Projects e.V., a registered association supporting the integration of South Asian communities in Germany.
- Vice President, IEEE student branch, NUCES Lahore · 2011 – 2012