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Soheil Nezakat

Software Engineer

Profile

I'm a forward-thinking professional who enjoys turning complex concepts into practical, real-world solutions. Over the years, I've collaborated with diverse teams and tackled a variety of challenges, always seeking new ways to streamline processes and drive meaningful results. I'm currently pursuing an advanced degree in Computer Science, focusing on biodiversity monitoring and AI-driven analytics—work that reflects my commitment to using technology for a positive impact. I thrive on continuous learning, problem-solving, and bringing fresh ideas to the table, and I'm excited to keep exploring how data and innovation can shape a better future.

Work Experience

2024–Present **Research assistant at Smart Greenhouse (ISSE Dept)**, *DIGIT - Center for Digital Technologies*, Goslar, Germany

- Optimized greenhouse automation performance by fine-tuning Python scripts, leveraging advanced debugging techniques.
- Applied supervised and unsupervised learning techniques to analyze sensor data, enabling predictive analytics and anomaly detection in real-time systems
- Developed custom classifiers in OpenCV, enabling automated plant recognition and categorization.
- Implemented (CNNs) for image classification and object detection, improving precision in identifying plant health anomalies.
- Created and maintained comprehensive GitHub repositories, reducing code search time by 25% and improving team collaboration.
- Optimized scripts to follow best practices, while regularly updating changes and improvements in Git for version control.
- Reviewed, debugged, and improved existing code, focusing on efficiency and functionality.
- Organized and managed cable setups to ensure all systems were properly connected and functioning from the start.
- Utilized Git for version control and collaborative development, managing branching strategies, conflict resolution, and automated CI/CD pipelines.

2023–2024 **Software engineer and data analysts**, *TU Clausthal*, Clausthal, Germany

- Configured Raspberry Pi systems with Python-based camera integration, achieving 30% faster system response times.
- Developed robust Python-based control systems using OpenCV and PySerial, enhancing system reliability and responsiveness by 30
- Optimized Spark SQL queries on Databricks for big data analysis, resulting in a 3x improvement in processing speeds for machine learning feature extraction.
- Designed and implemented real-time autofocus algorithms, enhancing image clarity by 50% through advanced image processing and object detection techniques, resulting in higher system performance.

- Froze first 13 layers to retain low-level feature extraction.
- Added GlobalMaxPool2D, Batch Normalization, Dropout, and Dense layers for classification.
- Integrated Softmax activation for multi-class output and adapted neural networks for regression tasks.
- Designed and implemented real-time autofocus algorithms using deep learning, enhancing image clarity by 50% through advanced image processing and object detection techniques.
- Applied V-model for rigorous software development and testing, reducing defect rates by 20% and ensuring high-quality deliverables.
- Implemented Python unit tests using frameworks such as PyTest and Unittest to ensure code reliability and maintainability across various projects.
- Developed and implemented a data transmission channel using Python, improving data transfer efficiency by 40% and enabling real-time weather data analysis.
- Created an advanced display system for 3D point cloud visualization using Python, enhancing data visualization capabilities by 60%, leading to better analysis and decision-making.
- Analyze the existing datasets to identify patterns, trends, and outliers.
- Modernized the access/programming interface/API of individual TUC weather station sensors and visualized data in Grafana, reducing data processing time by 50% and improving usability.

2021–2022 **Head of Software Engineering and Data Analytics**, *IHD*, Dubai, UAE

- Enhanced data interoperability by integrating DHA HASANA system using Kafka and NiFi, reducing processing time by 40%.
- Migrated and upgraded hospital IS database from Oracle to Postgres, ensuring 50% better performance and data reliability, which improved overall system efficiency.
- Led the development of automated testing frameworks for Python-based systems, achieving 95% test coverage and reducing production issues by 30%.
- Designed and implemented a redundant SQL database architecture for Oracle and MySQL, ensuring 99.9% data reliability and availability, minimizing data loss and downtime.
- Designed real-time dashboards in Qlik Sense & Oracle BI with KPIs such as revenue metrics, enhancing decision-making by 30%.
- Developed Expert Systems for automated medical diagnosis recommendations, improving clinical decision-making efficiency by 30%.
- Implemented Fuzzy Logic Systems to improve patient data classification and optimize hospital resource management.
- Applied Knowledge-Based Systems to automate fraud detection in insurance claims, reducing fraudulent activities by 20%.
- Conducted data mining and visualization using BI tools like Qlik Sense, Power BI, and Oracle Data Visualization, identifying anomalies and clusters, leading to a 20% improvement in data insights and decision-making capabilities.

2020–2021 **IT Manager**, *IHD*, Dubai, UAE

- Spearheaded the integration of DHA Hasana system using API-based workflows, reducing data errors by 30% and ensuring compliance.
- Collaborated with cross-functional teams in Agile environments to develop real-time analytics solutions including sprint planning, retrospectives, and delivering incremental features.
- Integrated HIS with financial applications via custom middleware, enhancing financial accuracy by 35% and streamlining audits.
- Implemented RCM software system, enhancing revenue cycle management efficiency and reducing billing errors by 20%, resulting in improved revenue management.
- Achieved EMRAM score six at HIMSS by implementing cutting-edge health information systems, enhancing healthcare service quality and operational efficiency.
- Directed the hospital's transition to paperless workflows using digitization and cloud storage solutions, reducing paper use by 90%.

2014–2020 **Software System Engineers**, *IHD*, Dubai, UAE

- Developed and deployed an intelligent SMS-marketing solution, increasing patient engagement by 25% through targeted and efficient communication strategies.
- Deployed HIS system leveraging automation frameworks like Selenium and API integrations, reducing task time and increasing revenues by $20M in the first year.
- Reduced outpatient waiting times by 80% by implementing EID smart card systems integrated with HIS using HL7 standards, improving patient satisfaction.
- Integrated medical equipment with HIS using HL7 protocol, improving data accuracy by 30% and streamlining clinical workflows, resulting in better patient care.
- Optimized processes across all hospital workflows including medical, HR, Doctors workbench, Nursing, Pharmacy, CRM, and Inventory, resulting in a 25% increase in overall operational efficiency and cost savings.
- Standardized HR workflows including personnel tracking and attendance, improving HR operations and efficiency by 20%, resulting in better employee management.
- Applied V-model methodologies to ensure robust software architecture and rigorous testing for embedded systems projects.
- Implemented first-time registration system using vein pattern recognition, enhancing security and efficiency by 40%, ensuring faster and more secure patient identification.
- Developed complex SQL queries for ETL workflows, optimizing joins and indexes to improve query performance by 40
- Designed and implemented complex workflows by integrating SharePoint, InfoPath, and SQL, improving data management efficiency by 25%, leading to better workflow automation and data handling.
- Delivered cross-functional projects by implementing Agile frameworks, utilizing work breakdown structures, and mitigating risks to ensure on-time, on-budget delivery.

Education

2022–2025 **M.Sc. Computer Science**, *Technical University of Clausthal*, Clausthal, Germany
Thesis: "Biodiversity monitoring"

2013–2015 **M.Sc. Software Engineering**, *IAU UAE Branch*, Dubai, UAE
Thesis: "Data encryption and image processing"

2008–2013 **B.Sc. Software Engineering**, *IAU of Lahijan*, Lahijan, Iran
Focused on software engineering with an emphasis on mathematical logic

Technical Skills

Languages	Java, Python, R, MATLAB, C#, Delphi
Frameworks	Spring Boot, React, Node.js
Big Data	SQL Server, Oracle, PostgreSQL, Neo4j, MySQL, optimizing Delta Lake storage
Tools	Git, JIRA, Confluence
Frameworks	Raspberry Pi Development, Real-time Data Processing, Process Automation, Requirements Analysis, Solarwinds SAM, PRTG Monitoring
BI Tools	Apache Kafka, Apache NiFi, Hadoop, Spark, Power BI, Qlik Sense, Grafana, Tableau

Languages

Persian	Native
English	Advance
German	Basic