

SHASHANK RANGARAJAN

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EXECUTIVE SUMMARY

Seasoned engineer with expertise in Machine Learning and Software Development, specializing in Applied ML research, MLOps, and large-scale data systems. Proven track record of delivering scalable, production-grade ML solutions across E-Commerce, Healthcare, Semiconductor, and Mobile Phone industries. Aim to drive impactful results at the intersection of software and machine learning research.

SKILLS SUMMARY

- **Languages:** Python, Java, JavaScript, TypeScript, SQL, C
- **ML Lib:** PyTorch, Tensorflow, PySpark, scikit-learn, Weka, HuggingFace, GenerativeAI - OpenAI, LangChain
- **MLOps:** Amazon - Sagemaker, EMR, Apache Airflow, MLflow, Iterative.ai - Data Version Control (DVC)
- **DevOps:** Docker, HAProxy, GitLab Runner, Amazon Fargate
- **Full-stack:** Flask, FastAPI, NodeJS, Spring, AWS - Lambda, API Gateway, React
- **Cloud:** AWS (EC2, S3, ECS, StepFunctions), GCP (BigQuery), Azure-OpenAI
- **Database:** SQL - Amazon RDS, MySQL; NoSQL - Amazon DynamoDB, Couchbase, MongoDB
- **Design:** Web-App, ML-pipeline (data processing, model training, validation, re-calibration, re-training, deployment, serving)

WORK EXPERIENCE

- **Intel Corporation** California, US
Machine Learning/ Data Scientist - II(Full-time) *Jul 2024 - Present*
Team: Analytics and Intelligence - Drives optimization of private cloud infrastructure for Intel world-wide
 - (Ongoing) Modeling memory predictions for batch jobs, expected to improve resource utilization and cost savings (upto 80%)
- **Amazon.com Inc.** Karnataka, India
Software Development Engineer (Full-time) *Jun 2020 - Jul 2022*
Team: Espresso - Delivers MLOps platform to accelerate experimentation and deployment of ML experiments
 - Designed systems to integrate Apache Zeppelin notebooks into production ETL flows, enabled 10x faster experimentation through streamlined data science workflows. Collaborated with customers to onboard first production use case
 - Re-architected legacy model re-training pipeline, ensured 100% uptime while migrating 90+ production models. Collaborated with cross-functional team (applied scientists, developers) to achieve seamless transition
 - Transitioned production database to federated AWS accounts seamlessly with 0-data loss and minimal availability impact
 - Created a one-click solution to manage configurations, facilitating updates to prod configs without needing deployment
 - Managed 1 intern, oversaw development of peer-review feature to ensure safe updates in production workflows
 - Resolved 100+ security risks, SEV2s across 10+ production pipelines ensuring operational excellence
- **Motorola Mobility** Karnataka, India
Software Development Engineer (Full-time, Contractual) *Sep 2019 - Jun 2020*
Team: Over The Air updates (OTA) - Provides software upgrades for motorola devices world-wide
 - Launched smart updates for Motorola's (classical line of) phones, ensuring seamless updates for over 100K devices
 - Ideated customer feedback feature into the OTA app, enhancing user engagement and customer satisfaction
 - Implemented a game recommendation engine, led a cross-functional team of 4 to integrate it on the "Hello You" app offering personalized experiences for users
 - Managed 2 interns, created a log analyzer tool for automatic call-drop detection, reducing ticket turn-around time by 30%

INTERNSHIP EXPERIENCE

- **Intel Corporation** California, USA
Machine Learning Intern (Full-time; Part-time - Aug'23 to Dec'23) *May 2023 - May 2024*
Team: Analytics and Intelligence - Drives optimization of private-cloud infrastructure for Intel world-wide
 - Innovated a deep-learning based patch scheduling system to optimize OS patching/fixes (requiring reboot), cut machine blocking, and cut down resource wastage by 60%
 - Leveraged natural language processing (NLP), large language models (LLM) for feature engineering, achieved a 30% boost in scheduler performance
 - Designed MLOps pipeline, streamlined experimentation, and simplified deployment process
 - Developed a scalable model deployment framework, with a centralized model registry, and a containerized model inference API enabling rapid deployment across multiple regions
 - Built a GPT-backed chat API with RAG (retrieval augmented generation) and analytical capabilities - using Langchain/OpenAI agents, enhanced user experience on the management portal. Integrated to Intel's GenAI community of practice (CoP)

- Siemens Healthineers** Karnataka, India
Software Development Intern (Full-time) *Jan 2019 - May 2019*
Team: Computed Tomography (CT) - Develops CT applications for Siemens CT scanners
 - Devised a tool to monitor and manage 72+ test machines, reducing QA manual efforts by approximately 10%
 - Formulated SSE-based protocols for network calls in test agents, resulting in 0 polling traffic from the centralized primary
- Philips Healthcare** Karnataka, India
Deep Learning Research Intern (Full-time) *Jun 2018 - Jul 2018*
Team: Radiology & Cardiology Informatics - R&D that improves Philips healthcare technologies world-wide
 - Constructed deep learning-based computer vision models to detect brain hemorrhage in CT scans, and validated models through reconstruction using class-activation heat maps
 - Leveraged pre-processing models (auto-encoders), and improved previous performance by 30%

RESEARCH EXPERIENCE

- University of Southern California** California, USA
Graduate Teaching Assistant (Part-time) *Sep 2023 - May 2024*
 - CSCI-585: Database Systems for the Spring 2024 offering. (Jan - May 2024)
 - DSCI-250: Introduction to Data Science for the Fall 2023 offering. (Sep - Dec 2023)
- Student Researcher (Part-time)* *Feb 2023 - Dec 2023*
 - Laboratory of Neuro Imaging (LONI), Keck School of Medicine (Feb - Dec 2023): Led a team of 5 engineers for NIH's Data Archive for the Brain Initiative (DABI), spearheading development of analysis pipeline and multiple backend components
 - Vilesov Group, Chemistry Department (Feb - May 2023): Trained deep learning models to analyze X-Ray Diffraction in *He* bubbles with 98% efficacy. Synthesized data and statistical estimation models for radius, intensity, aspect-ratio, and rotation

EDUCATION

- University of Southern California** California, USA
Master of Science - Computer Science; GPA: 4.0/4.0 *Aug 2022 - May 2024*
M.S. Honors | Courses: Machine Learning, Algorithms, Natural Language Processing, Deep Learning, Databases, Multimedia Systems, Information Retrieval
- Sri Jayachamarajendra College of Engineering** Karnataka, India
Bachelor of Engineering - Computer Science; CGPA: 9.75/10 *Aug 2015 - May 2019*
University Rank 3 | Courses: Data Structures, Adv. Math, Operating Systems, Networks, Data Mining

PUBLICATION

- K M Anil Kumar, B Ajay, **R, Shashank**, & D A, Amogha Subramanya. (2019). An Apriori Method for Topic Extraction from Text Files. In International Journal of Recent Technology and Engineering (IJRTE) (Vol. 8, Issue 2, pp. 2516-2521). Blue Eyes Intelligence Engineering and Sciences Engineering and Sciences Publication - BEIESP

ACCOMPLISHMENTS

- CSCI MS Honors & Scholarship @ USC - (May 2024)
- Presented at the Engineering Compute Technical Conference (ECTC) @ Intel - (Nov 2023)
- Awarded DRA (Department Recognition Award) for innovations in EC @ Intel - (Oct 2023)
- Recognized by Amazon Machine Learning University - Fraud Detection Challenge, Top 5 (among 200+) @ Amazon - (Oct 2021)
- Winner - Philips Hackabout 2017 - A data science challenge organized @ Philips - (Oct 2017)