Akshit Bhalla

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Education

- **Carnegie Mellon University - School of Computer Science** — Pittsburgh, PA
  Master of Software Engineering in Scalable Systems — GPA: 4.0 — *Dec 2023*
- **B.M.S. College of Engineering** — Bangalore, India
  Bachelor of Engineering in Electronics and Communication — GPA: 9.05/10.0 — *Aug 2020*

Experience

- **Adobe Research** — San Jose, CA
  Research Scientist/Engineer Intern — *May 2023 – Aug 2023*
  - **Compute Observability**: Developed a framework to automatically process telemetry of GPU clusters and improve resource scheduling for much better efficiency. Significantly reduced costs for training large language models. Filed for a patent.
- **Carnegie Mellon University** — Pittsburgh, PA
  Research Assistant, Computer Science Department — *Nov 2022 – May 2023*
  - **Wind Tunnel**: Advised by Prof. Majd Sakr on research and development of a tool to monitor the performance of large data pipelines and identify bottlenecks, such as for autonomous vehicle data processing. Project funded by Honda Research labs.
- **Hewlett Packard Enterprise** — Bangalore, India
  Software Engineer 2, Cloud R&D — *Jan 2020 – Jul 2022*
  - **Awards**: Received the Spot Recognition award for outstanding contributions to Bare Metal as-a-Service. Achieved the high-flyer award for 2 consecutive quarters. Published a white paper for fleet management.
  - **Hybrid Cloud**: Developed algorithms in Go for the provisioning of compute, network and storage across data centers. Implemented API Orchestration with microservices using Go and PostgreSQL.
  - **Mentoring**: Conducted presentations on multi-threaded services in Go and engineering quality standards for team members, and led technical sessions for on-boarding new employees.
  - **Code Quality**: Led the adoption of unit and functional testing in Go for multiple teams. Measured an increase in maintainability through the creation of a style guide.
  - **CI/CD**: Created pipelines in Jenkins, SonarQube, and CircleCI to enforce quality standards and automate deployments.
- **Philips** — Bangalore, India
  Research Intern, Radiology and Cardiology Informatics — *Jun 2019 – Aug 2019*
  - **AI-assisted clinical prognosis**: Created state-of-the-art Machine Learning models to resolve difficulties in content-based medical data retrieval, due to the presence of complex radiology features and additional dimensions in medical image. Worked on designing loss functions (triplet loss) and efficient models on complex, multi-dimensional medical data.
  - **High-dimensional data visualization**: Implemented the t-Distributed Stochastic Neighbor Embedding (t-SNE) method for visualizing high-dimensional data which proved to be useful for segmentation analysis.
- **Hasura** — Bangalore, India
  Software Intern — *Dec 2017 – Mar 2018*
  - **GraphQL and React Native**: Implemented wit.ai integration with GraphQL that enabled a proof of concept to interact with customers using voice and text, utilizing Natural Language Processing (NLP). [*Link*]
- **NeuralDot Research** — Bangalore, India
  Founder — *Sep 2018 – Aug 2020*
  - **Computer vision on ARM devices**: Acquired funding from TEQIP-III to conduct research on quantization for image captioning on ARM systems. Resulted in a **first-author paper** publication at the IEEE C2I4 conference.
  - **Kaggle Competitions**: Held events with peak attendance of 150 people for a competition on galaxy classification. [*Link*]

Publications

[1] Akshit Bhalla et al. (2021) *VIEW: Optimization of Image Captioning and Facial Recognition on Embedded Systems to Aid the Visually Impaired*, IEEE International Conference on Communication, Computing & Industry 4.0 (C2I4), doi: 10.1109/C2I454156.2021.9689405. Proceedings published in IEEE Xplore.

Honors

- **CMU 15-619 Cloud Computing (Top 4)**: Designed an ETL pipeline to process 1 TB of social data in 5 minutes. [*Link*]
- **HackCMU 2022 Mentor**: Conducted an API workshop and guided 3 teams during Carnegie Mellon's yearly hackathon. [*Link*]
- **WebVR Hackathon by Scapic (Flipkart) - 1st Place**: Leveraged 3D tools to create a SpaceX Falcon replica. [*Link*]
- **Inkers Vision AI Challenge - Top 10 (of 1072 participants)**: Designed a resource-efficient deep learning structure for Stanford's Tiny ImageNet Challenge. [*Link*]

Skills

- **Languages**: Python, Go, C, C++, Java, SQL, Scala, JavaScript, TypeScript HTML, CSS, MATLAB, R
- **Tools**: Git, Docker, Kubernetes, Helm, Terraform, Tensorflow, PyTorch, OpenTelemetry, Spark, Hadoop, React, React-Native
- **Platforms**: AWS, Microsoft Azure, Google Cloud, Databricks, Jenkins, CircleCI, Amazon RDS, Cassandra, MongoDB