Pranshu Gupta

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# Professional Experience

I am a senior software engineer with 7 years of experience, specializing in building highly available, low latency, distributed systems. I have worked on systems that power Microsoft Azure and LLM Inference on Azure AI.

## **Microsoft Azure OpenAI** **•** Senior Software Engineer **•** Jan 2025 – Present

Led the development and architecture for data plane APIs serving all large language model inference on Azure.

* Led the design and implementation of a scalable, distributed rate limiter to serve 2 billion requests/day.
* Contributed to the design and implementation of Azure AI’s prompt router, launched at Microsoft Build 2025.

## **Microsoft** **Azure Core •** Senior Software Engineer **•** Mar 2024 – Jan 2025

## Software Engineer II • Jun 2020 – Mar 2024

Led the development and architecture for resource provisioning in Azure Resource Manager, the unified platform for deploying and managing all resources on Azure.

* Led and delivered improvements in bulk delete API, reducing P90 latency by 50% and P99 by 65%.
* Designed and led the development of background job quota-based throttling in Azure control plane.
* Implemented a critical security patch and helped more than 200 teams in Azure onboard to it.
* Implemented callback design for resource actions, which reduced the number of polling requests by 60%.
* Implemented dependency handler in resource group deletion, which reduced failures by 98%.

## **Microsoft Core Services** **•** Software Engineer **•** Jun 2017 – Aug 2019

Designed and implemented modules for Customer Data Enrichment Service, which enriches customer data from marketing campaigns to help marketers create better sales opportunities for Microsoft.

* Migrated to serverless architecture, reducing operation costs by 90% and improving performance by 3x.

# Technical Skills

* Programming Languages **⁚** C#, Python, C++, PowerShell, Azure Bicep, Kusto QL, HTML/CSS/JS, Markdown
* Cloud and Infrastructure **⁚** Microsoft Azure, .NET Core/Framework, Redis, Azure CLI, Service Bus
* AI and ML **⁚** Generative AI Inference, OpenAI API, GitHub Copilot, PyTorch, Deep Reinforcement Learning

# Education

## **Georgia Institute of Technology, Atlanta** • May 2020 • MSCS (ML specialization)

## **Indian Institute of Technology, Kanpur** • May 2017 • B.Tech. CS

# Publications

* Saha, K., Gupta, P. et al. Observer Effect in Social Media Use | Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems - <https://dl.acm.org/doi/10.1145/3613904.3642078>
* El Sherief, M., Saha, K., Gupta, P. et al. Impacts of school shooter drills on the psychological well-being of American K-12 school communities – <https://www.nature.com/articles/s41599-021-00993-6>

# Selected Projects

* [Image completion with statistics of patch offsets](https://github.com/Pranshu258/Image_Completion) – 44 stars on GitHub.
* [Crowd behavior analysis](https://github.com/Pranshu258/Crowd_Behavior_Analysis) – detect outliers in the trajectories of entities in a moving crowd using the minimum description length principle – 39 stars on GitHub.
* [Deep image captioning](https://github.com/Pranshu258/Deep_Image_Captioning) – generate captions for an image using deep reinforcement learning model with embedding reward – 26 stars on GitHub.