Akash Mahajan

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SUMMARY

I currently work as an applied scientist with expertise in speech recognition, digital signal processing, and deep learning. Most recently worked on transcription & diarization for AI-assisted meeting recap.

I do my best work in environments that require quick learning from experts, simplifying the complex, and a product-minded approach.

EXPERIENCE

Senior Applied Scientist | Microsoft Azure Speech   Nov 2018-present
Offline speech recognition
- Developed and shipped a Conformer-S2S based system to Azure Batch API that improved accuracy by 10% at 15% lower cost (real-time factor)
- Designed long-form inference strategy, improved data pipeline, and optimized inference in ONNX

Diarized, farfield transcription of conference rooms
- Co-developed metrics, led system-wide error analysis locating bottlenecks in complex multi-component pipeline (mic array processing, speech separation, hybrid ASR, diarization, display formatting)

Real-time speech recognition
- Developed and shipped LC-BLSTM based hybrid (HMM / WFST) acoustic models, incorporating larger offline teacher models into production recipes

Co-founder and Tech lead | OrcaHello [Microsoft Global Hackathon]   2019-2022
- AI-assisted Southern Resident Killer Whale (SRKW) acoustic monitoring & alert system, running 24x7 at 3 locations reducing moderation time to an avg. 10min/day
- Award-winning project that has raised $30k in Azure credits, $15k+ in cash grants for non-profit partners
- Setup data pipeline from scratch, built (with 20+ volunteer hackers) and open-sourced [github]

Teaching Assistant / Course Project | Stanford   2017-2018
- TA for Machine Learning & Deep Learning (grading, office hours, mentoring course projects)
- Awarded best poster for CS224n NLP project implementing low-cost text-to-speech synthesis [github]

Founding Data Science member | Ather Energy [pioneering Indian EV startup]   2015-2016
- Co-developed a roadmap for vehicle intelligence by prototyping features (e.g. speed bump detection, predictive maintenance)
- Conceptualized and led the engagement for a unique EV test ride visualization experience [blog]

EDUCATION

Stanford University, M.S. Management Science & Engineering   2016-2018
Deep Learning/Digital Signal Processing, Databases/Computer Systems, Marketing/Strategy/Design

Indian Institute of Technology, Madras, B.Tech.   2011-2015
Chemical Engineering, minor in Control Systems (linear algebra, stats, signal processing)

MISC

Patents
- US11044287B1   Microsoft (granted, 2021)
  Caption assisted calling to maintain connection in challenging network conditions
- WO2018020475A1   Ather Energy (PCT application, 2018)
  A method and system for determining an operational condition of a vehicle component

Programming languages: Python, R, C, HTML/CSS/JS/C# (hackable)
Frameworks & Tools: Pytorch/AMP/DDP, Docker, AzureBatch/ML/Blob data pipelines, ONNX