Mayank Sharan

Applied Scientist II, Microsoft

Phone: (858)-319-5144 / Email: mayanksharan96@gmail.com
www.linkedin.com/in/mayank-sharan / Website

EDUCATION

- **University of California, San Diego** — San Diego, USA
  M.S. in CS&E [Thesis]; GPA: 3.922/4.0 — *Sept 2021 – Mar 2023*
- **Indian Institute of Technology, Delhi** — Delhi, India
  B. Tech. in CS&E (Specialization in Data Analytics & AI); GPA: 9.043/10 — *July 2014 – May 2018*

WORK EXPERIENCE

- **Applied Scienctist II** — Redmond, USA
  Microsoft Turing — *Jun 2023 - Present*
  - Training large language models for general purpose and specialized tasks.
  - Working to empower the new Bing where we integrate ChatGPT like LLMs with Bing.

- **Graduate Student Researcher** — UC San Diego, USA
  Spatio-temporal Machine Learning Lab (Prof. Rose Yu) — *Nov 2021 - May 2023*
  - Developed methods to mitigate long tail error in deep probabilistic forecasting models. [Thesis]
  - Investigated causes of long tail error developing general theories.

- **Applied Science Intern** — Bellevue, USA
  Microsoft Turing — *Jun 2022 - Sep 2022*
  - Working with world's largest language model at the time [Megatron-Turing NLG]
  - Enabling smart dialog systems to handle long term multi-session context

- **Senior Data Scientist** — Bangalore, India
  Bidgely Technologies (Series C Energy AI company) — *Jul 2018 - Sep 2021*
  - Tech Lead: Hybrid Recommender System, PySpark migration, MATLAB to python migration
  - Developed industry leading core products using causal inference and state of the art ML
  - Lead product design and tech development of Hybrid recommender system
    * Serving hyper-personalized recommendations to 3M+ homes based on 18T+ data points
    * Presented the engine in client meetings leading to more than $1M in contracted ARR
  - Developed Weather data analytics, a data driven season detection and analysis module
    * Identifies season boundaries within ± 7 days improving upon the previous error of ± 42 days
  - Served as technical mentor to 2 data scientists and 2 summer interns
  - Developed state of the art short term load forecasting framework
    * Achieved a MAPE of 0.392% for 1-day ahead forecast beating the previous SoTA at 0.609%.
    * Won Bidgely Hackathon 2019 with proof of concept developed in 24 hours
  - Spearheaded MATLAB to python migration of AMI disaggregation suite
    * Achieved over 10x increase in throughput saving $60,000+ per month in cloud costs
  - Developed vacation detection algorithm improving F1-score from 65% to 78%
  - Optimized pool pump disaggregation module from a run time of 24s to 1.5s

- **Data Science Intern** — Mountain View, USA
  Bidgely Technologies (Series C Energy AI company) — *May 2017 - July 2017*
  - Developed lighting detection and estimation for AMI data achieving 99.3% and 86.2% accuracy.
  - Completed the work during an 8 week internship period and the work was patented [Patent]

Projects

- **Constrained Multi Agent Traffic Signal Control** — University of California, San Diego
  Prof. Yu, Course Project — *Oct 2021 - Dec 2021*
    - Developed theory for constraint inclusion in multi agent RL settings
    - Evaluated multiple approaches with multi agent traffic signal control as a task

- **Detecting Nicotine Addiction via Eye Tracking** — Indian Institute of Technology, Delhi
  Prof. Rahul Garg, Research Project — *May 2016 - May 2018*
    - Created novel paradigm with eye tracking tasks to detect nicotine addiction
    - Developed eye tracking stabilization module to obtain consistent data from the eye tracker
    - Developed end to end software for administering the test and collecting eye tracking data
    - Extracted featured from collected data, classified subjects and predicted FTND score *[Website]*

Other Projects

- **Summarizing News Articles using Pointer-Generator Networks**: Modified the current SoTA to improve abstract summaries by a ROUGE score of 0.62 *[Website]*
- **Multiplayer Online Game**: Developed game from scratch with immersive sound effects using JavaFX, Swing and UDP. *[Website]*
- **Visual Question Answering**: Created a CNN-LSTM based VQA network with 64.72% accuracy in 2017 MS-COCO VQA challenge
- **Compiler Design**: Built end to end compiler with modules for scanning, parsing, tokenizing, AST, assembly code and execution
- **News Item Classifier**: Naive Bayes Classifier that categorizes news items into 8 categories with 90% accuracy

Technical Skills

- **Languages**: C/C++, Java, Python, Go, SML, MATLAB, HTML, CSS, PHP, SQL, NoSQL, javascript
- **Frameworks and Cloud**: Spark, PySpark, Hadoop, AWS, Azure, IBM Cloud
- **Libraries and IDEs**: Tensorflow, PyTorch, PyCharm, Android Studio, NS3, Mininet

Honors & Achievements

- **Spot Award**: Received the award twice in 1 year of the program at Bidgely for outstanding performance
- **IIT JEE, 2014**: All India Rank 68 among 1.4 million applicants
- **Semester Merit Award**: Received the award for being in top 7% of class for 2 semesters at IIT Delhi
- **KVPY, 2012**: Fellow in the young scientist program conducted by IISc, Bangalore
- **IChO, 2014**: Invited for Orientation cum Selection Camp for being in the top 35 applicants nationwide

Volunteer Experience

- **Aarohan, IIT Delhi**: Taught financially challenged kids to support in IIT JEE preparation