VARUN SOOD

Senior Data Scientist

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EXPERIENCE

Senior Data Scientist

dataeaze systems

📅 April 2022 – Ongoing   📍 Pune, India

- **Collision prediction in Dashcam**(In progress):Developing a solution using yolo and depthmap to predict the collision before it happens to issue warning to user.
- **ResumeRAG** (Complete): Developed ResumeRAG, leveraging **Retrieval-Augmented Generation (RAG)** for document information extraction and feedback generation.
- **Car Wheelbase**(Delivered): Implemented Car Wheelbase Estimation using advanced prompting techniques.
- **Image Quality Project**(Deployed): Image quality for PCI and real world measurement. Modeling Dinov2 and images quality features for classifying, precision **90.03+%** on test data **LoRA(Low rank adaptation)** Fine tuning using **0.68%** parameters.
- **PCI Using Dashcam**(Delivered): Road quality assessment using (Video-Vision Transformer)ViViT for PCI grading(1-5 scale).
- **Crack Measurement**(Production): Developed a road width estimation model using DepthAnythingV2, achieving performance comparable to manual labeling.
- **Accident Risk Prediction:**(Delivered) Built ARP system with Efficient-NetV2 & DeepLabV3; achieved **MAE < 10%** at **0.625m resolution** using multi-modular datasets.
- **Person Re-identification:** Developed PoC for SmartCCTV on Market-1501 dataset.
- **Infrastructure & Optimization:** Built data pipelines, reducing storage by **80%** and training time by **67%** (HDF5 format). Integrated checkpointing, versioning (Bitbucket, S3), and Weights & Biases (wandb).
- **Mentorship & Recognition**: Mentored junior team members, enabling growth through guidance and knowledge transfer. Awarded **"Mentor of the Machine"** for leadership excellence.

Senior Software Specialist

Infineon Technology

📅 July 2019- March 2022   📍 Bangalore, India

- **SystemC Modeling** of Embedded system components in the next generation of Aurix products in C++ language.
- Using system C modeling we are introducing a shift-left approach in the simulation paradigm to reduce the time to market for the product
- Designed, developed, and tested **PKC,STM** from scratch based on project specifications, leveraging open-source libraries.
- Built **Python**-based data injection tests for multi-core system validation.
- Maintained and upgraded legacy models like **QSPI** in **C** and **C++** for **Aurix Tricore**.
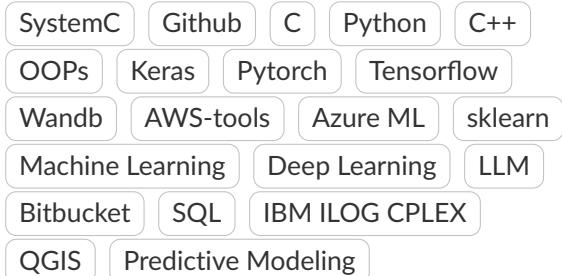
Extreme Blue Intern

GTS Labs, IBM India Private Limited

📅 May 2018 – July 2018   📍 Bangalore, India

- Developed a Multi-Tier Pattern Deployment Solution to reduce time-to-market for cloud-based deployments.
- Used vRealize Automation & Orchestrator to build an MVP, showcased at **Extreme Blue 2018 Expo**.

STRENGTHS & SKILLS

SystemC   Github   C   Python   C++   OOPs   Keras   Pytorch   Tensorflow   Wandb   AWS-tools   Azure ML   sklearn   Machine Learning   Deep Learning   LLM   Bitbucket   SQL   IBM ILOG CPLEX   QGIS   Predictive Modeling

M.TECH. THESIS PROJECT

A Multi-grid method for the Optimal Placement of Electric Charging Stations

📅 January 2019 – June 2019

- Used IBM ILOG CPLEX optimizer for factory location Optimization Problem, a known NP-hard problem.
- Actual on-road distance is used between 2 locations in a graph converted from map of city. As the size of the map increases, the pre-processing step takes a lot of time. Hence, becoming a bottleneck for the entire project.
- Used multi-grid approach, problem is converted into a coarser-grid problem, hence speeding up pre-processing time by 5 times.
- Optimal locations for charging stations resolves the problem of overcrowding at the charging station & saves time for the drivers.

CERTIFICATION

- **Deep Learning** by DeepLearning.AI on Coursera. Certificate

EDUCATION

Master of Technology in Computer Technology

Indian Institute of Technology Delhi, New Delhi, INDIA

📅 July 2017 – June 2019

CGPA: 8.48

Bachelors of Engineering in Electronics & Communication

University Institute of Engineering & Technology, PU, Chandigarh, INDIA

📅 July 2012 – May 2016

CGPA: 8.37 with Hons.