Ammar Yasir Naich

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Summary

As an aspiring Computer Vision and Machine Learning Engineer, my passion extends across the innovative landscape of AI applications, including but not limited to Autonomous Vehicles. Nearing the completion of my Ph.D. in Computer Science at Queen Mary University of London, I have accrued over 15 years of experience dedicated to pioneering solutions in computer vision and machine learning. My research has prominently featured the use of advanced Convolutional and Vision Transformer models toward complex detection and navigation challenges, showcasing my expertise in the intricacies of autonomous systems. My professional journey, enriched by roles such as Technical Manager, Software Engineer, and Teaching Fellow, has honed my skills in leadership, communication, and interdisciplinary teamwork. Eager to confront new challenges, I am committed to leveraging my deep technical knowledge and leadership abilities to drive innovation and mentor upcoming talents within the expansive realms of AI, computer vision, and machine learning

Education

- **Queen Marry University of London** — London, UK
  PhD in Computer Science (thesis writing up) — *June. 2019 – May. 2024*
- **Mehran University of Engineering and Technology** — Jamshoro, Pakistan
  Master of Science in Computer Science; GPA: 3.67/4.00 — *December. 2007 – October. 2010*
- **Mehran University of Engineering and Technology** — Jamshoro, Pakistan
  Bachelor of Engineering in Electrical and Electronics; GPA: 3.45 — *December. 2003 – December. 2008*

Experience

- **Queen Marry University of London** — London
  PhD Research — *June 2019 - April 2024*
  - **3D Object Detection for Autonomous Vehicles**: Have been engaged in the development and testing of deep learning models, specifically focusing on Convolutional and Vision Transformer models for 3D object detection. Building and managing data and model pipelines to train and evaluate these models using large datasets such as KITTI and Waymo based on Openmmlab framework. Developing custom cuda kernels and using Distributed Data Processing and Multi-GPU training for computational efficiency, utilizing Nvidia 1x3080RTX and 2xA100 GPUs for model training and testing
  - **Object Detection in Adverse Weather Condition**: Doing research on Adverse Weather Augmentation techniques for robust 3D Object Detection for Level-5 Autonomoy
- **Queen Marry University of London** — London
  Teaching Fellow — *Oct 2021 - Present*
  - **Big Data Processing Module**: Coursework and Lab designing, Managing, and Conducting Lab, Solving student queries, Marking
  - **Principal Of Machine Learning**: Coursework and Lab designing including crowdsourced datasets , Managing, and Conducting Lab, Solving student queries, Marking
  - **MSc Student Supervision**: Supervising MSc Students for their Final Year projects in the domain of Deep Learning and Computer Vision
- **NodeNS** — London
  Embedded Software Engineer — *2020 and 2021*
  - Creating a Sensor Integration Unit to facilitate on-the-fly connections between mmWave radar sensors and edge devices
  - Formulating and implementing a security protocol to ensure secure communication across the network
  - Identifying and establishing a technology stack for the development team to utilize in their projects
  - Designing and building a graphical user interface tool for efficient data transfer and configuration of sensors

- **Maritime System Limited** Pakistan
  Technical Manager / Software Architecture *Jan 2018 - Sept 2018*
  - **Led and Managed Cross-Functional Teams**: Have managed and Led to complete projects in accordance with ISO 9000 and CMMI (Capability Maturity Model Integration) standards in software engineering.
  - **Real-time Data Acquisition**: Designed and developed software applications for real-time data acquisition, ensuring timely and accurate data processing.
  - **GIS Application Development**: Created GIS applications using QGIS open-source tools for geographical data visualization and analysis.
  - **Packet Filtering and Data Fusion**: Developed applications for packet filtering, data fusion, data correlation, and association using Qt-Creator Framework.
  - **Emulators and Simulators**: Designed emulators and simulators for software application testing, enhancing the quality and reliability of the developed software.
  - **Hardware Sensor Interfacing**: Proficient in interfacing hardware sensors with GUI software for data visualization and real-time monitoring.
  - **Network Communication Protocol Design**: Designed communication protocols for heterogeneous hardware integration, ensuring seamless data exchange between different devices.
  - **Alert Management Systems**: Developed alert management systems for timely notification and response to critical events.

Programming Skills

- **Programming Languages**: Python, Nvidia GPU Programming withNumba/CUDA, C++
- **Libraries/Frameworks** : PyTorch, Tensorboard,Open3D, Numba, OpenMMLAB, Hugging-Face
- **Technologies**: Docker/Apptainer, MQTT/Kafka/Apache Streaming, Apache Spark, GitHub/DockerHub/Notion
- **Tools**: GitHub, DockerHub, Notion,vscode, QTCreator, Wireshark, VSPE(serial port emulator)

Award/Certificates

- **NVIDIA DLI**: Fundamentals of Accelerated Computing with CUDA Python
- **Coursera, University of California San Diego**: Big Data, Version 1 Specialization
- **Coursera, University of Toronto**: Visual Perception for Self-Driving Cars