Burhan Rashid Hussein (PhD)

Computer Vision and Machine Learning

Machine and Deep Learning research engineer with **5+ years experience** in building commercial ML and DL algorithms for various domains and data types. Specialized in classification, segmentation, objection detection and generative deep learning approaches using **advanced neural nets like CNNs and transformers**. Skilled at **collaborating** with a team of experts, establishing **project-aligned metrics**, optimizing **data pipelines**, **delivering production prototypes** and effectively communicating **results**. Passionate about leveraging AI to **drive innovations** by solving complex problems.

EXPERIENCES

Inria, Rennes, France
Postdoc Deep Learning Research Engineer (Medical Imaging)
June 2022 - Present

- Developed **commercial deep learning algorithms** for segmentation of multiple sclerosis (MS) lesions from spinal cord **MRI**, handling extreme **class imbalance** and **multi sequence** data **(T2w and Stir MRI)**
- **Collaborated** closely with **engineers** and **clinician** to evaluate 3D models for **detecting** and **segmenting** MS lesions in **spinal cord MRI data**
- Established **clinically-aligned evaluation metrics** to ensure accuracy of deep learning solutions for MS lesion detection
- Engineered an **optimized pipeline for preprocessing spinal cord MRI** data using advanced **deep learning frameworks like TensorFlow and PyTorch**
- Delivered a **production-ready, containerized deep learning prototype** at **industrial standard** by performing **unit test** and utilizing **Docker**
- Explored current **SOTA approaches, advance learning strategies and architectures** like **transformers**, **attention mechanism and auxiliary learning** to assess the performance and **clinical** relevance
- **Supervised** 3 masters thesis projects which directly **contributed to the project**
- **Dockerized** an automated **Dicom** data acquisition system leveraging **API** integration to efficiently retrieve datasets
- Developed and dockerized a **breast cancer classification** solution using **mammography imaging** for production ready environment
- Proficient in utilizing **Git** for **version control, collaboration**, and **maintaining code integrity** across multiple projects.
- **Communicate** research findings in prestigious **conferences and journals**

Pi school of AI, Rome, Italy
Data Scientist
March 2022-May 2022

- Developed a **prototype machine learning** model that predicts fuel consumption of the rental car based on OBD vehicle sensors.
- **Designed** and **fine-tuned a deep learning model** to predict facial keypoints from audio recordings in the animation industry.
- Weekly communicated project improvements to **stakeholders** and achieved their expectations.

Universiti Brunei Darussalam, Brunei
Doctoral researcher in computer vision and machine learning
January 2019 - November 2021

- Developed **deep learning pipeline** to automatically **extract individual leaves** from herbarium images utilizing segmentation and classification models.
- Developed a **generative adversarial network** (GAN) to reconstruct damaged leaves that enhanced the classification accuracy for species identification.
- Explored **feature extraction with pre-trained deep learning models** for improved plant species classification.

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LinkedIn
GitHub
GitLab
Orcid

SKILLS

Python
Lightning
Tensorflow
PyTorch
Scikit-learn
Git
Docker
Linux
Communication & Presentation
Project management

EDUCATION

Universiti Brunei Darussalam
PhD in Computer Science (CV and ML)
(awarded)
November 2021

Universiti Teknologi Brunei
MSc. Computing and Information systems (Data Mining)
(Distinction)
August 2018

Ruaha Catholic University
BSc. Software engineering
(3.9/5.0 GPA)
November 2016

LANGUAGE

English (Fluent)
Swahili (Native)
French (A1)

OTHERS

Volunteering as a reviewer
Freelancer for AI projects

- **Cardiovascular disease prediction**
- Predicting house-hold waste generation
- ZnO activity prediction
- Time-series predictions