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AMIR MOHAMMADIKARBALAEI

PROFILE

I'm a results-driven and detail-oriented Mechanical Engineering graduate seeking a challenging Data Analyst role. I'm passionate about ML and AI techniques, and have demonstrated aptitude in these skills through both personal projects and my academic studies. I'm seeking a dynamic and innovative organisation that values continuous learning and growth.

EDUCATION

Newcastle University, 2017-2020

BEng (Hons) Mechanical Engineering

Design and implementation of a thermal control system

- Evaluated different development kits for various microcontrollers.
- Simulated and experimented with different control loops in MATLAB/Simulink.
- Successfully implemented a PID control algorithm through embedded C.

Bellerbys College Brighton, 2016-2017

Engineering Foundation year

Course included Math, Physics and Mechanics, achieved 73% overall grade.

SKILLS

- Python (Numpy, Pandas, Scikit-Learn,TensorFlow)
- SQL
- Tableau
- ML & AI – including Reinforcement learning
- NLP- (nltk, sentiment analysis)
- Computer Vision-Object detection
- Matlab / Simulink
- GitHub
- Ansys
- Embedded C

WORK EXPERIENCE

Student Mechanical Engineer, AVID Technology Limited

Jul 2019 – Sep 2019

- Led the ThermoFluid group in incorporating software solutions to increase efficiency.
- Conducted a software review of OpenModelica and Xcos Scilab, two powerful tools for modelling and simulating dynamic systems.
- Conducted an in-depth evaluation of centrifugal pumps and fans engineered by AVID, whereby a significant manufacturing concern pertaining to impeller surface finish was identified.
- Enhanced longevity of the pumps through proactive resolution of the matter.
- Gained valuable experience in project and product life cycle management.

TECHNICAL EXPERIENCES

News aggregation web extension

- Leveraging semi-supervised learning to label scraped articles from news websites.
- Employing LLM embeddings and cosine similarity scores to assess article similarity. This, combined with weighted article labels, serves as a suggestion mechanism for users
- Developing an Active Learning Suggestion Model that initially recommends articles based on user preferences. The model learns from customer behaviour, including article engagement duration and click through rate, to enhance the scoring system and optimise future recommendations.

Mate ROV Competition:

- Participated in a prestigious international competition focused on designing a marine rover.
- Collaborated as a key member of a sub-group within my university's competing team to successfully design and manufacture two crucial mechanisms of the rover: the Gripper and release mechanism.
- Effectively communicated and collaborated with diverse multidisciplinary sub-teams, achieving project milestones and becoming the first group from Newcastle University to qualify for the competition.

PERSONAL PROJECTS

- Utilised time series forecasting and classification techniques to detect and analyse EEG biopotential signals.
- Implemented object detection algorithms on a custom dataset.
- Applied unsupervised learning for customer clustering on a retail shop customers dataset,
- Implemented Q-learning to train an agent for autonomous gameplay in Gym environment games.