SHASHANK MEWADA

Machine Learning Researcher

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London, United Kingdom

Summary

Team Leader with 8+ years of experience in AEC, Automotive and Healthcare sector. Proficient in Python, C++, skilled in Machine Learning, Computer-Aided Design having hands-on experience in creating the complete Machine Learning pipeline to solve business problems.

Skills

Libraries and Frameworks: PyTorch, Pandas, Matplotlib, Scikit-learn, NetworkX, Streamlit

Tools: AWS (Lambda, S3, Sagemaker), Docker, Git, JIRA

Languages: Python, C++, SQL

Machine Learning, Deep Learning, Object Detection, Classification, Regression

Computer-Aided Design (CAD): AutoCAD, Fusion360, Meshmixer, CATIA, SolidWorks, FreeCAD

Work Experience

Team Leader - (CAD and Machine Learning) Mar 2019 – Feb 2022
AMP Engineering Design Ventures LLP -Mumbai, India

- Manage an agile team of 5 engineers responsible for the entire software development process from understanding requirements through the delivery of working software.
- Lead research of new technologies, read papers and performed literature reviews.
- Key Contributions/ Projects:
  1. Implemented Generative Adversarial Network **(GAN)** using **PyTorch** for handling class imbalance and Bounding Box detection for symbol **detection and classification** in P&ID technical drawing which resulted in savings INR. 0.5 million
  2. Migrated existing DOS based legacy application and developed a **Hybrid application** for Vibration and Shock Response calculator using **C++** and rendering (plots, animations) using **Python, OpenGL** which resulted in savings of DKK. 1.4 million Annually.

Senior Engineer Mar 2016 – Mar 2019
AMP Engineering Design Ventures LLP -Mumbai, India

- Take part in the research, design & development of solutions to fulfil the customer's requirements.
- Design and Develop high quality, secure and stable code that conforms to established coding standards.
- Key Contributions/ Projects:
  1. Co-developed and received a **Patent** for an archival of native CAD files: - Phatak, Amar and **Mewada, Shashank**. 2021 "Method for Lossless Compression and Regeneration of Digital Design Data" - U.S. Patent No. US10891759B2 - Date of Filing: Mar 23, 2016 - Date of Patent: Jan 12, 2021.
  2. Developed **AutoCAD plugin** (Amp Layout Automation) using **ObjectARX** for symbol detection and classification in Architectural floor plan which resulted in saving of INR. 1.1 million Annually.

Graduate Engineer Jul 2013 – Mar 2016
AMP Engineering Design Ventures LLP -Mumbai, India

- Automate existing manual computer-aided design processes to fulfil the customer's requirements.
- Model detailed 2D or 3D designs for complex assemblies as per industry and engineering standards.
- Key Contributions/ Projects:
  1. Processed 12300+ AutoCAD drawing files and consolidated the drawing data into a spreadsheet using **AutoLISP, C#** and **MS. Excel** which reduced drawing search and retrieval time by 70%.

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2. Modelled, assembled Automobile components (Tyres, Rubber Bush and Hoses) from machining drawing / scanned **point clouds** using **AutoCAD** and **CATIA**.

Data Science Projects

1. BrepNet
   Trained neural network (BRepNet) to generate **segmentation** for STEP files in Fusion 360 Gallery segmentation dataset.

2. Deep Flow Prediction
   Implemented modified **U-Net** architecture using **PyTorch** and trained it on UIUC Airfoil Dataset to calculate the Pressure and Velocity distribution. Created the web application in Streamlit for trained model inference.

Education

Deep Learning Specialization, deeplearning.ai – Coursera | May 2020 - Aug 2020

Applied Data Science with Python, University of Michigan – Coursera | Jan 2020 - Jun 2020

University of Mumbai, Bachelor of Mechanical Engineering | Jun 2008 - May 2012

Interests

Geometric Deep Learning, Spline curves and surfaces

Additional Information

Contributor: **BRepNet** (https://github.com/AutodeskAILab/BRepNet)

Visa Status: Dependant (Skilled Worker)

Availability: Immediate