HUSSAIN Wasif Latif

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EDUCATION

The University of Hong Kong | *Bachelor of Engineering.* ***Sep 2021 – May 2026***

- Awards: **Full Scholarship**
- **Major:** Computer Science | **Focus:** Financial Computing & Software Engineering.
- **Roles**: Co-Founder The Betterment Society | HKU Student Ambassador | HKU Equal Opportunity Ambassador.

PROFESSIONAL EXPERIENCE

TCL Technology | ***Off-Cycle Software Engineering Intern | TCL AI Lab Team*** ***Apr 2023 – Aug 2024 (Present)***

- **Developed the company's AI Services Platform** for serving graph convolutional neural network models to clients over private networks, featuring a secure and modern React JSX frontend and Flask API backend.
- **Enhanced data preprocessing speeds for Graph Convolutional Neural Network training** by optimizing algorithms and implementing advanced data structures, whilst also implementing multi-processing and threading. This brought a 75% improvement in data preprocessing speeds.
- **Created a comprehensive database management system** for the company's molecular data storage, featuring a robust admin and user system that enables efficient user-request handling, direct database edits, and user management by admins without the need for developer interventions.
- **Designed a secure service packaging system using PyInstaller** to deliver AI models and services as executable files, hence protecting company owned source codes and AI models, whilst also allowing clients to train and use models using executable files and without installing dependencies.

Move It Move It Limited | ***Artificial Intelligence Intern*** ***Dec 2022 – Jan 2023***

- **Developed realistic simulations** of real-world furniture scenarios using NVIDIA Isaac Sim to generate diverse dataset images for AI model training.
- **Created object classes and annotated images** with bounding boxes using Roboflow, enhancing object localization for the YOLOv5 model.
- **Trained a YOLOv5 convolutional model** on prepared datasets, enabling accurate detection of furniture types and relative sizes, resulting in a 40% improvement in model performance compared to the company's legacy CNN model.

Key Direction Limited Consultancy | ***Data Analysis Intern*** ***May 2022 – Aug 2022***

- **Analyzed and interpreted maintenance data** for the company's Singapore Railways LRT using Pandas, NumPy, and Matplotlib, applying predictive analytics to enhance maintenance efficiency and minimize disruptions.
- **Created Process Automation python scripts** with PySpark and Pandas to automate data handling processes, reducing manual entry time by 45%.
- **Built a user connectivity dashboard** using React Admin, Bootstrap, and MUI, enhancing user experience and website interactivity by 60%.

HIGHLIGHT PROJECTS

See more at wasiflatifhussain.github.io

SharedTable | *Promoting food sustainability by connecting restaurants giving away leftover food to the people in need.* GitHub | Video

- **Developed a full-stack platform** utilizing Next.js & TypeScript, integrating user-friendly UI/UX design and MongoDB for data storage. Implemented secure user authentication with Auth0, image storage with Cloudinary, and payment processing with Stripe.
- **Pioneered self-made advertisement and donation systems** enabling businesses to create and manage advertisements, and to support their favorite restaurants and the platform through donations. Integrated Stripe CLI webhooks for real-time payments and interactive user notifications using toasts.
- **Implemented an AI-powered image detection system** for automatic food recognition, simplifying menu entry processes and improving efficiency. Trained a convolutional neural network (CNN) model using transfer learning with the DenseNet-201 architecture on combined datasets from Food-101 and Food-2k. This included data cleaning and augmentation to ensure consistent dataset sizes, supporting 139 classes of food items with high accuracy.

InclusiveCapital | *A platform empowering financial inclusion for underrepresented groups through accessible microloans* GitHub | Video

- **Developed a full-stack application** with a Next.js frontend using Material Tailwind and Heroicons, and a Flask backend for AI model integration.
- **Engineered a credit score prediction feature** using a StackingClassifier model, incorporating multiple algorithms (Bagging, ExtraTrees, RandomForest, HistGradientBoosting, XGBoost) and trained on a dataset of around 100,000 data points.
- **Devised an estimation system to predict the probability of loan default** using an XGBoost model, optimized with grid search and cross-validation, and trained on approximately 95,000 data points.
- **Integrated the Llama-3b model** for business proposal evaluation, analyzing strengths and weaknesses of business ideas to give a risk score out of 10.

CourseSage HKU | *A Comprehensive Platform for Course Planning and CGPA Extrapolation at HKU* GitHub | Video

- **Built a full-stack application** with a ReactJS frontend using Chakra UI, Express/Node.js backend, and MongoDB for data storage.
- **Created a web scraper** to collect comprehensive course data, reviews, and grades, which are then used to develop a regression model with NumPy and Pandas to analyze and sort courses by grades, generating a custom scoring factor for better course selection.
- **Implemented sentiment analysis** with the RoBERTa model and Huggingface Transformers to evaluate course reviews and estimate student sentiment regarding the workload and grading of different courses.

NOTABLE ACHIEVEMENTS AND HACKATHONS

- **Cathay Hackathon 2023** | Top 10 among 80+ teams by making an AI-powered preference-based customer reward system for Cathay Shop.
- **JPMorgan Chase Finance for Non-Finance 2024** | Selected among 45 individuals from APAC region to complete an immersive finance training program under the guidance of JP Morgan associates.
- **Laidlaw Scholarship 2022-2023** | Selected among the top 25 student researchers from over 2500 applicants from leading universities (Oxford, Leeds, etc.). Conducted extensive research on Point-of-Care testing technology and co-authored a research paper published in the Frontiers Research Journal.
- **Greater Bay Area FinTech Talent Initiative training under Goldman Sachs & Bloomberg** | Among the selected 15 candidates of Goldman Sachs.

RESEARCH PAPER PUBLICATIONS

Point-of-care Testing: A Critical Analysis of the Market and Future Trends | *Co-Author* Read at the Frontiers Journal

- **Conducted research and co-authored a comprehensive review** on the market trends, challenges, and future directions of point-of-care testing (POCT).
- **Analyzed historical market value trends and projected future growth**, highlighting advantages of POCT such as portability, simplicity, and rapid results. Addressed challenges like accuracy issues and emphasized on the potential for integrating intelligent technologies to enhance POCT devices.
- **Conducted a financial analysis** revealing positive growth trends, identified potential areas for market expansion, and performed a SWOT analysis to evaluate strengths, weaknesses, opportunities, and threats within the POCT market.

SKILLS

- **Core:** Python, Java, JavaScript, Typescript, C/C++, Shell (Scripting), Linux/Unix, R Language.
- **Machine Learning**: Logistic Regression, Convolutional Neural Networks, Graph Neural Networks, XGBoost, Stacking Models, Llama-2 Model, YOLOv5 for Object Detection.
- **Web, App and Database:** React, Vue.JS, React Native, Jinja2, Django| NodeJS and Express | SQL, MongoDB, SQLAlchemy, Postgress | Docker