Chaoran Huang

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Technical Skills

Languages : JAVA, Python, C/C++, C#, SQL (MySQL), JavaScript, TypeScript, Assembly
Frameworks : Spring Boot, Flask, Django, Pytorch, Tensorflow, SpaCy, Crypto++, jQuery, React, Angular, Node.js, ExpressJS, Bootstrap
DevOps and API Tools : Git, Docker, Kubernetes, Jekins, Postman, Jira
Cloud and Security Tools : ***Amazon Web Services (AWS)*** , ***Google Cloud Platform (GCP)*** , SQL Server, Linux (Configuring and Managing)

Education

Brown University	MS in Computer Science, GPA: 3.8	Sept 2022 - May 2024
University of California, Irvine	BS in Computer Science, Major GPA: 3.9	Sept 2017 - June 2021

Working Experience

Full-Stack Developer, Co-founder | *LexCloud Tech Solutions Co., Ltd., Remote* *August 2023 – June 2024*

- Spearheading the development and integration of an all-in-one business management webapp and a QA-focused ***large language model (LLM)*** with machine learning and deep learning solutions: ***Langchain*** for legal professionals.
- **Project: Integrated Issue Management Webapp and Language Model for Legal Practice**
  - Built the issue/case management webapp using ***full-stack*** technologies, focusing on ***React, and Tailwind*** for the frontend, and ***Spring Boot*** with ***AWS DynamoDB, ElasticBeanstalk, EC2*** and ***CloudFront CDN*** for the backend.
  - Developed the LLM webapp with PyTorch and LangChain to aid lawyers in legal case understanding and document preparation.
  - Integrated advanced fullstack components: ***Next.js*** , ***Google SSO*** , ***Prisma*** and ***Spring Boot Retrofit2, Spring Security*** for enhanced functionality.
- **Achievements:**
  - The bespoke system significantly streamlined communication and workflow within law firms, attracting a considerable investment.

Software Developer | *My Car Auction, Inc, Irvine, CA* *March 2021 - July 2022*

- Contributed to the development of an automated car inspection application and management system, including web app and software development and micro-service integration to enhance business operations.
- **Project 1: Competitor Price Scraping System**
  - Engineered a web scraping system using ***Selenium and Puppeteer/Pyppeteer*** to accurately fetch daily pricing data from over **30,000** competitor companies across the U.S.
  - Integrated ***Axios/Express, AWS DynamoDB*** , and ***Vaadin framework*** for robust data processing and presentation, enhanced with ***ngrok*** automation and anti-scraping techniques.
- **Project 2: Oracle NetSuite Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) System**
  - Developed and integrated NetSuite CRM and ERP system software with iTextPDF, DocuSign, PandaDoc, and Auto-lead Data Format (ADF) using ***Java Spring Boot, OAuth2.0, and Retrofit2***
  -Coordinated and customized company's Financial & Accounting team's requirements in collaboration/communication with Oracle NetSuite consultants, greatly boosted working efficiency
- **Project 3: Named Entity Recognizer for Used Vehicles (Github)**
  - Developed a ***Natural Language Processing model*** using ***SpaCy*** to extract key vehicle attributes from textual descriptions, enhancing search engine effectiveness.
  - Managed full lifecycle of model development from data collection and cleaning to training with ***CNN, LSTM, and BERT transformers*** , and final software integration.
  - Improved daily auto-lead numbers by **70%**, enabling the offshore team to access crucial information more efficiently.
- **Project 4: Sales Visualization Dashboard Web App**
  - Developed an interactive dashboard using ***Flask, Angular, and ECharts*** for visualizing sales data, enabling better marketing decisions and automating commission calculations for employee payroll
  - Integrated micro-services for offshore teams and the Finance Department to track sales processes and vehicle auction stages

Research Projects

Activation Checkpointing for Deep Neural Network Training System | *Harvard University* *Jan 2024 - May 2024*

- Developed and implemented techniques to optimize memory usage in deep neural network (DNN) training using PyTorch.
- Created a comprehensive ***computational graph profiler*** on ***Bert*** and ***ResNet*** to analyze memory and computation time for each operation, categorizing inputs/outputs, and generating peak memory usage graphs.
- Designed and implemented an algorithm to selectively store and recompute activations node trees during training, reducing peak memory requirements by up to ***70-85%.***
- Achieved significant memory savings, enabling the training of larger models with larger mini-batch sizes, and provided detailed experimental analysis on performance improvements.

Data & Web App Development: Netflix Fullstack Clone | *University of California, Irvine* *March 2020 - June 2020*

- Developed a Netflix clone movie store website using ***Java*** and ***JavaScript*** , managing the backend database with ***MySQL*** , and deploying the project via ***Amazon AWS*** for an average load time under **300ms in pressure text**.
- Enhanced website functionality by implementing full-text search, auto-complete, stored procedures, and various performance-tuning techniques.
- Strengthened website security with ReCAPTCHA and encrypted passwords, while expanding versatility by creating an accompanying ***Android*** mobile app with ***Google firebase*** .

Web Crawler & Search Engine | *University of California, Irvine* *March 2020 - June 2020*

- Developed a ***Python-based*** web crawler to navigate all web pages under ics.uci.edu, utilizing packages such as ***Requests, Re, and BeautifulSoup.***
- Created a web-based UI search engine via techniques: like ***TF-IDF*** , for querying user-entered text in local databases, leveraging ***cosine similarity*** to measure the relationship between input text and crawled web pages.
- Achieved a response time of **100ms** for search queries, enabling fast and efficient user interactions.
- Presented a comprehensive report detailing the accurate number of pages within the specified domain and successfully avoiding crawler traps.