

# HAO JIN

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## EDUCATION

**Northeastern University** - Boston, MA

Jan 2022 - December 2023

*Master of Computer Science*

Relevant Coursework: DBMS(MySQL), Web Dev(Node, React, MongoDB), OOD(Java), Distribute System, Algo

**Northeastern University** - Boston, MA

May 2018 - August 2020

*Bachelor of Information Technology*

Relevant Coursework: Database Management, UI/UX Design, Web Development, Network Security

## PUBLICATION

Polly Talks About the Weather: Toward Evaluating the Expressive and Enrichment Potential of a Tablet-Based Speech Board in a single Goffin's Cockatoo     **Computer-Human Interactions (CHI) | 2024(Under Review)**

## WORKING EXPERIENCE

**Red City Fitness**

December 2020 - August 2021

Full Stack Web Developer

*Boston, MA*

- Spearheaded a design revamp with **Balsemiq**, **Sketch**, and **Photoshop**, boosting user personalization by 20% after user feedback incorporation.
- Pioneered a responsive web app using **Node**, **React**, and **HTML/CSS**, driving user interactivity and leading to a 25% surge in user engagements.
- Overhauled the **Python** back-end with **Django**, implementing efficient algorithms, and achieving a 15% speedup in user sign-ins.
- Consolidated fragmented user and purchase data into a unified **MySQL** database, enhancing data retrieval efficiency and quickening access by 30%.

**SNFA Automated Equipment Co.**

September 2021 – December 2021

Lead Software Development Engineer - Website, Cellphone App Design and Development

*Shanghai, China*

- Spearheaded the development of robust systems using **SpringMVC** and **Spring Boot**, incorporating user feedback and leading to a notable 35% rise in user activity.
- Integrated and managed data flows between **MySQL** and **HANA** using **MyBatis**, optimizing database interactions and expediting project milestones by 30%.
- Strategically employed **Redis** and **RabbitMQ** for efficient system caching, resulting in smoother operations and a 15% decrease in system glitches.
- Seamlessly combined **jQuery**, **Bootstrap**, and **Echarts** for a cohesive frontend experience, optimizing load times and reducing user-facing issues by 25%.
- Leveraged Git's version control capabilities, ensuring code consistency and facilitating collaborative efforts among the development team.

## RESEARCH EXPERIENCE

**MIT, IUPUI, NEU - ACI & Computer Mediated Communication**

Research Assistant - Data Collection & Visualization

May 2023 – September 2023

- Analyzed **120 hours** of video data from the **Goffin's cockatoo**, involving logging, labeling, coding, and examining **4,698 icon presses**, enhancing the project's depth in the field of ACI.
- Utilized **OmniGraffle** to design and visualize the **Commboard Tree** data structure, enhancing the representation and understanding of data types in the project.
- Utilized **RStudio** for advanced data visualization, ensuring accurate graphical representation of analyzed results.
- Collaborated effectively with a multi-disciplinary team, contributing to both the design phase and final data analysis of the "**CHI 2024 - Polly Talks About**" research.

**MassArt - AI STORY/IMAGE GENERATOR**

Co-researcher - AI and 3D Integration

April 2023 – Present

- Delved into innovative methods, exploring how **3D models** can seamlessly integrate with **Chat-GPT** for immersive user experiences.

- Pioneered the creation of a custom **API**, bridging the gap between **3D models** and **Chat-GPT**, enabling real-time interactions.
- Leveraged the capabilities of **Unity** and **Unreal Engine**, designing interactive scenes where Chat GPT drives 3D model behaviors.
- Curated an exhaustive list of pivotal **research links**, forming a foundation for advancements in AI-driven 3D interactions and modeling.

## NEU - NN4SysBench: Neural Network Verification for Computer Systems

Research Assistant - Machine Learning

January 2023 – April 2023

- Unearthed intricate challenges in system neural networks, pinpointing issues such as **OS scheduling** delays and inconsistencies in database records, which had stymied previous optimization attempts.
- Dived deep into the intricacies of the NN4Sys proposals, meticulously replicating each component to assess real-world feasibility, revealing both its strengths and areas for improvement.
- Led the charge in devising comprehensive specifications for **neural networks**, setting a gold standard in the organization and ensuring projects adhered to best practices.
- Orchestrated cutting-edge deep learning experiments harnessing **PyTorch** and the **d2l tool**, unearthing insights that steered the direction of subsequent projects.
- Delved into the realm of reinforcement learning, utilizing platforms like **Gym** and **Park**, paving the way for breakthroughs in adaptive system behaviors.

## UMass Amherst - Analysis of Papers

Research Assistant - Front End

May 2023 – August 2023

- Demonstrated advanced **JavaScript** and **jQuery** proficiency in an NYU **Qualtrics** survey project, manipulating the DOM and dynamically generating content.
- Seamlessly integrated the Qualtrics **API** for custom front-end functionalities, and designed user **interactivity features** like dynamic textbox positioning and context-aware feedback.
- Developed a robust **data export mechanism** capturing highlighted phrases and causal relationships, ensuring data completeness before progression.

## ACADEMIC EXPERIENCE

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### Comprehensive NLP Course Platform | *Python, TensorFlow*

January 2023 - April 2023

- Designed and implemented **Sentiment Analysis** systems to predict user sentiments from tweets using **Twitter API** and **Tweepy**.
- Developed a **course platform** leveraging **Python** and libraries like **SpaCy** & **NLTK**, offering tutorials on text classification, spam detection, and more.
- Utilized **Deep Learning** techniques with **TensorFlow** & **Keras** for advanced NLP tasks such as **Automatic Text Generation**, **Word Embedding**, and **Text Classification** using CNN & RNN.

### Computer Graphics | *C++*

September 2023 - December 2023

- Developed an advanced graphics simulation utilizing shaders, optimizing GPU computation by implementing an "evolution" function that leverages time as a dynamic variable.
- Implemented runtime shader modifications, enabling users to transform the simulator's appearance instantly through keyboard inputs.

### Advanced Vision System | *Python, Keras, GANs, RetinaNet*

February 2023 - June 2023

- Leveraged the **VGG**, **ResNet**, and **Inception** architectures to design advanced CNN models for medical image analysis, specifically for blood cell identification.
- Implemented a **real-time object detection system** utilizing **SSD** and **RetinaNet** for potential applications in self-driving vehicles.
- Developed an innovative **neural style transfer system** using CNNs to merge the content and style of distinct images, producing unique artworks.
- Explored the capabilities of **Generative Adversarial Networks (GANs)** to create photo-realistic images, pushing the boundaries of synthetic image generation.
- Streamlined the development process using **Keras**, emphasizing high-level building blocks and minimizing low-level code complexity.

SKILLS

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Programming:	Experienced with Python, R, HTML, CSS, JavaScript, Go, Java, C++
Framework:	React, Node, jQuery, Express, NumPy, Pandas, OpenGL, PyTorch, d2l, Gym, Park
IDE:	PyCharm, VScode, IntelliJ, Android Studio, Rstudio, Jupyter Notebook
Software:	Anocondo, MySQL Workbench, MongoDB, Omnigraffle
Research:	Animal Computer Interaction, Data Collection & Visualization, Machine Learning, AI