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## Ting Xu

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## Contact Information

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## Education

### Washington University in St. Louis

*Master of Science in Electrical Engineering*

Relevant Coursework: Machine Learning, Embedded Systems, Data Science, Signal Processing

**GPA: 3.72/4.0**

*Aug 2021 - May 2023*

### Shanghai Maritime University

*Bachelor of Engineering in Electrical Engineering*

Relevant Coursework: Robotics, Control Systems, Image Processing, DSP, Circuit Theory

**GPA: 3.51/4.0**

*Sept 2017 - July 2021*

## Related Experience

### Technology Consultant

X2 Derivatives LLC (Now Byte Carnival LLC)

*June 2023 - Present*

St. Louis, MO

- Developed a GPT-based knowledge bot to address hallucination issues in language models by providing citation-backed answers.
- Collaborated with a legal firm to provide strategic insights, ensuring compliance and regulatory adherence for STEM-related projects.

### Tutor (College-Level and Professional Adults)

Varsity Tutors Inc.

*Feb 2024 - June 2024*

St. Louis, MO

- Delivered customized tutoring sessions in Mathematics, Physics, Computer Science, and professional development for diverse learners.
- Designed individualized learning plans that resulted in measurable academic improvement.

### Technical Support Specialist

Washington University in St. Louis

*Aug 2021 - May 2023*

St. Louis, MO

- Streamlined routing for the tech support group by analyzing daily operations, significantly reducing travel distances and boosting campus-wide efficiency
- Automated the pricing inquiry process for an EdTech project by developing a Python script with Selenium to systematically gather pricing data from vendor websites.

### Exchange Program Coordination Intern

International Association for the Exchange of Students for Technical Experience (IAESTE)

*Feb 2018 - June 2018*

Shanghai, China

- Facilitated the onboarding of overseas interns and organized cultural exchange events, improving participant satisfaction.
- Matched candidates with international roles, coordinating communication across multiple stakeholders.

## Skills

### Programming:

C, Python, MATLAB, C#, SQL, Shell, Git, Docker, AWS, Node.js, REST API

### Machine Learning:

SciKit, PyTorch, TensorFlow, LLM, Transformers, AWS Sagemaker, Yolo

### Engineering:

Embedded Systems, RTOS, MCU, DSPs, Oscilloscope, AWS IoT, I<sup>2</sup>C, CAD, Altium

### Music Technology:

MIDI, Music Theory, librosa, music21, Signal Processing, MIR

### Research:

L<sup>A</sup>T<sub>E</sub>X, Zotero, Overleaf, Data Analysis, Data Scraping, SPSS, Manim

## Research Experience

### Robotic Software Research Assistant

ROV Research Lab, Shanghai Maritime University

*Sept 2020 - June 2021*

Shanghai, China

- Conducted research on thrust allocation and developed an optimized algorithm in MATLAB using the Singular Value Decomposition (SVD) method to improve propulsion efficiency.
- Transformed the user experience and interface for ROV control by using .NET and C# to integrate a PS4 Controller, making it easier for non-professional users to operate and improving both accessibility and innovation in how users interact.

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## Embedded Systems Research Assistant

Hochschule Emden Leer

July 2019 - Sept 2019

Emden, Germany

- Developed and implemented device drivers for sensors with SMBus/ I2C interfaces on the nRF52840 platform using Embedded C for Riot-OS.
- Enhanced the testing efficiency by automating the process through the development of a dedicated testing program.

## Related Projects

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### CI Simulator

**Skills:** Python, librosa

- Designed and implemented a Python-based Jupyter Notebook to archive and simulate cochlear implant performance in noisy environments, providing a robust tool for data analysis and experimentation.
- Leveraged the Librosa library to model auditory responses of cochlear implant users and systematically evaluate the effectiveness of various noise reduction algorithms.

### Ezzy Job

**Skills:** Selenium, Grafana, PostgreSQL, REST API, Node.js, Docker

- Built a backend scraper to auto-collect job postings from Indeed by location and position.
- Developed a Node.js job tracker with enhanced UI/UX and integrated Grafana for real-time insights.

### A Metronome Using TENS Unit

**Skills:** I2C, GPIO, AWS IoT, MQTT, Python

- Developed an innovative embedded system that integrates Raspberry Pi, TENS technology, and AWS IoT to provide rhythmic guidance to musicians through targeted muscle stimulation, enhancing their timing and overall performance.
- Leveraged AWS IoT services for remote control and synchronization of the metronome, pioneering a new approach in music performance technology that could also aid in muscle relaxation and optimize performance.

### Application of DAS in Suicide Prevention

**Skills:** Python, SciKit-Learn, Data Science

- Created ML models to predict suicide risk from CDC data, improving early detection and personalized prevention.
- Applied data analytics to identify high-risk individuals and develop targeted interventions.

### Quiet Cool: ML for Fan Control `git`

**Skills:** Python, Flask, TensorFlow, Machine Learning, REST API

- Developed a server application with a REST API to dynamically control GPU fan speeds based on temperature readings, with a fallback mechanism to ensure stability in non-standard environments.
- Designed a custom ML model to balance fan noise and GPU temperature, achieving significant cooling efficiency improvements on enterprise servers like Dell PowerEdge R720.
- Implemented monitoring, logging, and fallback controls to ensure consistent performance under varying workloads.

## Awards

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### Scholarship for Foreign Students in Natural and Engineering Sciences, Agricultural and Forestry

2019

Awarded by: German Academic Exchange Service (DAAD), Germany

Reference No.: 91753533

Program Code: 57423938