

# Tim Ratsko

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## EDUCATION

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### Georgia Institute of Technology

August 2026

*MS Computer Science*

### University of Washington

September 2022 - June 2024

*BS Computer Science*

## EXPERIENCE

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### Software Engineer Intern

May 2025 – September 2025

*NASA Jet Propulsion Laboratory*

*La Cañada Flintridge, CA*

- Rearchitected the front-end interface to streamline integration with multiple data sources.
- Built a robust **Java**-based data pipeline to transfer and translate mission activity plans between two mission planning systems supporting NASA's Psyche asteroid mission.
- Processed and validated **50,000+** scheduled spacecraft activities by creating a new tool used by mission planners.
- Integrated **JSON** parsers and **Java** Object mappers to ensure accurate end-to-end data transformation.

### Software Engineer Intern

March 2025 – May 2025

*Templar Screens*

*Auburn, WA*

- Cut page load speed by **50%** through redefining **REST** endpoint instantiation logic.
- Reduced **API** requests by up to **50%** by implementing **pagination** and removing redundant calls.
- Improved customer experience by building **Reactjs** configuration pages to simplify app usage.
- Enhanced dashboard reporting by building aggregate **endpoints** with **SQL**-based filtering, reducing backend load, and enabling real-time order metrics.

### Software Engineer Intern

March 2024 – June 2024

*Exchange Video Platform*

*Los Angeles, CA*

- Led development of a video publishing platform allowing for **100+** users to upload, share, and customize content.
- Built and maintained a **RESTful API** using **TypeScript** and **Firebase**, handling over **1,000** daily requests.
- Increased system reliability with **85%** test coverage utilizing unit tests, ensuring consistent platform functionality.
- Streamlined collaboration between the team, resolving **50+** merge conflicts and maintaining code quality.

## PROJECTS

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### Predicting User Demographics with Machine Learning

- Achieved **95%** accuracy in predicting user age and gender through hyperparameter tuning with **Scikit**.
- Implemented multiple ML algorithms including **logistic regression**, **Naive Bayes**, and **decision trees** using **Pandas** for data preprocessing.
- Explored neural network architectures with **perceptrons** and **TensorFlow** for deep learning experimentation.

### Large-Scale Procedural World Simulation in JavaScript

- Built an online sandbox game without external game engines using Vanilla **JavaScript**, **HTML**, and **CSS**.
- Designed a procedural world generation system capable of rendering massive, scrollable environments spanning over **4 million** tiles.
- Optimized performance to support **1000+** dynamic entities and interactions in real-time gameplay through only loading rendered entities.

### Scalable Messaging Platform for Real-Time Communication

- Built a **full-stack** messaging platform enabling **100+** users to send and receive over **1,000** messages daily.
- Developed **10+** **RESTful** services in **Node.js** to support real-time communication between clients and server.
- Integrated a PlanetScale-hosted **MySQL** database to ensure consistent data reliability and uptime.

## SKILLS

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**Languages:** JavaScript, Java, Python C#, SQL, TypeScript

**Frameworks:** Node.js, React.js, Cloud Computing (Firebase, Azure), Continuous Integration/Continuous Deployment (CI/CD), Serverless Computing

**Technical:** Serialization, RESTful API, Object-Oriented Principles, Agile, Scrum, Model View Controller (MVC), Test-Driven Development, Microservices Architecture