

Jing Du

Seattle, WA | (206)-681-3910 | jingdu.wrk@gmail.com | [LinkedIn](#) | [Profolio](#) | [GitHub](#)

EDUCATION

M.S. Computer Science, Northeastern University Seattle, WA	Expected Aug 2026
M.Eng. Materials Science, Tohoku University Japan	Sep 2017
Dual B.S. Materials Physics & Computer Science, Taiyuan University of Technology China	Jul 2015

WORK EXPERIENCE

Software Engineer Intern Ylz Information Technology	May 2024 – Sep 2024 Hybrid
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- Developed backend components for a payment processing system using **Spring Boot** framework and implemented **RESTful APIs** for querying contribution status, policy details, and payment records.
- Enhanced backend performance by diagnosing slow queries and implementing composite indexes and partitioning in **PostgreSQL**, reducing data retrieval latency by 40%.
- Configured **Redis** caching for high-frequency lookups, decreasing API response times by 35% under concurrent usage.
- Designed reusable frontend components using **TypeScript** and **Vue.js** to create dashboards visualizing real-time claim status and payment progress, supporting both internal operations and public-facing self-service portals.
- Engineered comprehensive ETL pipeline for migrating tens of millions of records across legacy systems with data validation and reconciliation processes.


Software Engineer NARI Technology	Mar 2020 – Sep 2021 Beijing, China
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- Engineered components for a real-time monitoring platform serving 1,000+ autonomous inspection robots by processing telemetry from LiDAR, robotic arms, and sensors using **Java** backend services and **Kafka** for event-driven architecture.
- Implemented secure access using **OAuth 2.0** with **JWT** tokens, supporting role-based permissions at the gateway level.
- Established a **CI/CD pipeline** with shell scripts and internal tools integrated with **Git** workflows to automate testing and deployment of backend services, reducing manual release overhead and deployment time.
- Developed comprehensive unit and integration test suites using **JUnit**, **Mockito**, and conducted load testing with **JMeter**, increasing test coverage to 85% and identifying key performance bottlenecks.
- Drove quality improvements through active participation in **agile** sprints, code reviews, and daily stand-ups to ensure high code quality and team alignment.


RELEVANT PROJECT

AI-Powered Healthcare Search System 	<i>MongoDB, Express.js, React, Node.js, OpenAI API, AWS</i>
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- Built an AI-enhanced symptom search assistant using **OpenAI's GPT API** and **LangChain**, leveraging structured prompt routing to interpret user input and recommend relevant medical specialties.
- Developed a **Node.js/Express** backend to combine GPT outputs with real-time provider data from the NPI Registry API, adding semantic filtering and caching to improve accuracy and reduce latency.
- Designed a **React** frontend with **MongoDB**-based user profiling and deployed the system on **AWS** (EC2, S3, Auto Scaling), enabling personalized suggestions and scalable real-time search across providers.

AI Vision Studio - Eyes for the Blind 	<i>JavaScript, Flask, Python, SmolVLM, Web Speech API</i>
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- Developed an AI-powered accessibility application providing real-time visual assistance for blind and visually impaired users, implementing **computer vision** with voice feedback across 10 specialized analysis modes.
- Built comprehensive **Web Speech API** integration with customizable text-to-speech controls, keyboard shortcuts, and voice interrupt functionality, achieving seamless user experience for screen reader compatibility and hands-free operation.
- Engineered **Flask-based AI server** with SmolVLM model integration for real-time image analysis, implementing secure camera feed processing with privacy-first design ensuring no data storage or transmission of user images.

Machine-Generated Content Detection System 	<i>Python, Scikit-learn, DistilRoBERTa, NLTK, numpy, Pandas</i>
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- Developed ML classifier using ensemble methods (Random Forest + XGBoost) and transformer-based DistilRoBERTa to distinguish between human-written and AI-generated text, achieving 99.3% accuracy on dataset with 122,000 samples.
- Implemented comprehensive feature engineering pipeline combining TF-IDF vectorization, linguistic analysis (readability scores, sentiment analysis, lexical diversity), and NELA toolkit features for style, complexity, and bias detection.

SKILLS

Languages: Java, Python, JavaScript, TypeScript, SQL, HTML/CSS, C/C++

Tools: React, Vue.js, Express.js, Spring Boot, Flask, Django, Redis, MySQL, PostgreSQL, Kafka, Git, Docker, Linux, CI/CD, Kubernetes, [AWS \(Certified Cloud Practitioner\)](#)/GCP

AI/ML: Scikit-learn, PyTorch, TensorFlow, Transformers, NLTK, OpenAI API, Pinecone, LangChain