Thomas J. Trebat

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Software Developer with 15+ years of experience specializing in Java backend systems and scalable full-stack applications. Proficient in Java, Spring Boot, Python, and React.js, with practical experience in AI/ML frameworks such as PyTorch and Huggingface Transformers. Passionate about delivering robust software solutions and collaborating effectively in Agile teams throughout the full software development lifecycle.

SKILLS

Languages: Java, Python, Go, Groovy, Ruby, C, C++, Perl, SQL, JavaScript, HTML, CSS, Bash
Frameworks & Libraries: Spring, Spring Boot, JavaFX, Spark, Grails, React, Node.js, Express.js, Numpy, Pandas
Testing Frameworks: JUnit, Mockito, PowerMock, Jest, Mocha, Enzyme, Selenium
Messaging & Integration: ActiveMQ, RabbitMQ, Kafka, REST APIs, WebSockets, JSON, XML
AI & ML: PyTorch, Huggingface, TensorFlow, Keras, scikit-learn, vLLM, Optuna, TensorBoard, Jupyter Notebooks, embeddings, NLP pipelines, vector databases, model evaluation & deployment, real-time inference
Databases: PostgreSQL, MySQL, SQL Server, Oracle, MongoDB
Tools & Technologies: Docker, Git, Gradle, Maven, Hadoop, Postman
Cloud & DevOps: AWS (EC2, S3, Lambda), Kubernetes, CI/CD pipelines, Jenkins
Soft Skills: Communication, collaboration, problem-solving, adaptability, leadership, mentoring, Agile/Scrum

RESEARCH EXPERIENCE

Center for Information and Cyber Security – University of North Texas, Denton, TX
Research Assistant | *September 2024 – March 2025*

Worked on an applied NLP project focused on aligning job descriptions with candidate skill profiles using large language models (LLMs). The goal was to extract and match relevant skills from job descriptions to improve automated job–candidate matching.

• Developed and tested advanced prompting strategies (e.g., Chain-of-Thought, Retrieval-Augmented Generation) to enhance LLM performance on skill extraction and matching tasks.
• Designed and implemented domain-specific prompt templates tailored to HR datasets, improving accuracy in identifying implicit and explicit job skills.
• Built evaluation pipelines to compare model outputs with labeled ground truth, enabling systematic performance tracking and error analysis.
• Led data annotation and cleaning efforts to create high-quality training datasets for supervised fine-tuning and prompt evaluation.
• Analyzed model outputs to identify common failure patterns (e.g., skill hallucination, mismatch) and informed iterative prompt/model refinement.
• Contributed to academic publications and collaborated with faculty on integrating research outcomes into ongoing projects.

GeoSpatial AI Lab – University of North Texas, Denton, TX
Research Assistant | *August 2023 – September 2024*

Conducted research on Radio Map Estimation, a task focused on predicting radio signal strength across geographic areas using sparse measurement data. The project aimed to improve spatial inference and coverage prediction for wireless networks using deep learning.

• Developed and trained neural network architectures in PyTorch, including custom Vision Transformer (ViT)-inspired models, to estimate radio power distributions from limited spatial samples (<1% coverage).
• Achieved nearly 30% improvement in prediction accuracy over prior state-of-the-art CNN models in scenarios with sparse data (<1% sample coverage).
• Designed model variants to optimize spatial representation and generalization performance in the radio signal domain.
• Conducted comparative experiments across transformer-based, convolutional, and recurrent architectures to assess strengths in spatial interpolation tasks.
• Collaborated with lab members on research design, model evaluation, and codebase maintenance to support ongoing experimental workflows.

WORK EXPERIENCE

Software Developer
Tria Federal — *Remote | May 2021 – August 2023*

Worked on the Community Care Reimbursement System (CCRS), a mission-critical application used by the U.S. Department of Veterans Affairs (VA) to streamline claims processing for medical, dental, and health services provided to veterans under the Community Care Program.

Key Contributions:
• Developed RESTful web services and backend components using **Spring Boot** to support high-throughput claims processing.
• Integrated the business logic layer with **JPA/Hibernate** using **Spring's Inversion of Control (IoC)** for maintainable and scalable data access.
• Designed and maintained complex **SQL Server** scripts and stored procedures to support transactional workflows.
• Deployed applications on **AWS EC2** using **Docker containers** and **Kubernetes** for scalable, resilient infrastructure.
• Built a **CI/CD pipeline** with **Jenkins**, automating build, test, and deployment processes for rapid release cycles.
• Developed front-end features and user interfaces with **React.js**, enhancing user experience and system usability.

Software Developer
Ellucian — *Frisco, TX | December 2019 – May 2021*

Contributed to the development of a configurable software platform for student registration and state reporting, used by higher education institutions to manage compliance, administrative workflows, and system integrations.

Key Contributions:

• Developed and optimized database procedures using **Oracle PL/SQL** to manage large volumes of educational and administrative data.
• Built and maintained middleware services using **Java** and **Grails**, supporting backend logic and data flow across subsystems.
• Created dynamic front-end interfaces using **AngularJS**, improving user experience for registration and reporting workflows.
• Diagnosed and resolved system-level defects in legacy **Pro*C** modules.
• Standardized application deployment environments using **Docker** and **Kubernetes** for reproducible, scalable releases.
• Implemented build and deployment pipelines using **Jenkins** to deliver production-ready code to client institutions.

Software Developer
Apex Systems — *Plano, TX | July 2019 – October 2019*

Worked on a customer-facing insurance application for USAA, designed to help representatives generate accurate policy quotes and streamline access to client data through an integrated corporate platform.

Key Contributions:
• Built interactive front-end components using **React** and **Redux** to support real-time quoting workflows.
• Wrote unit, functional, and integration tests using **Enzyme** and **Selenium**, increasing code reliability and test coverage.
• Designed and implemented **REST APIs** in **Spring**, enabling seamless communication with backend services and third-party integrations.
• Created operational dashboards using **Kibana** and **Elasticsearch** to visualize system logs and support real-time monitoring.

Java Developer
LimoSys Software — *Englewood Cliffs, NJ | September 2018 – April 2019*

Worked on a dispatch and reservation platform supporting limousine and car service operations in the greater NYC area. The system enabled real-time trip tracking and reservation management for dispatchers and drivers.

Key Contributions:
• Built RESTful APIs in Java to manage booking reservations and trip data in a **SQL Server** database.
• Applied core **J2EE design patterns** (MVC, Session Façade, DAO, Front Controller) to build scalable, maintainable backend architecture.
• Developed unit and functional tests using **JUnit**, **PowerMock**, **SoapUI**, and **Postman**, improving test coverage and system reliability.

Software Engineer
SumRidge Partners, LLC — *Jersey City, NJ | November 2015 – December 2017*

Worked on a fixed-income analytics platform used by investment bankers and traders to monitor real-time price movements, analyze historical trade data, and submit quotes to external trading venues.

Key Contributions:
• Developed backend services in **Spring Boot** to handle real-time price transmission and quote delivery across trading systems.
• Integrated **Apache Camel** to route trading data using the **FIX protocol**, enabling reliable message flows between internal services and external trading venues.
• Implemented **ActiveMQ-based messaging** for pushing real-time bond pricing updates to dashboard interfaces used by traders, ensuring low-latency market visibility.
• Used **MyBatis** for Object-Relational Mapping (ORM) to manage transactional data in relational databases.
• Built **machine learning models** in Python using scikit-learn and TensorFlow to predict trading outcomes based on historical pricing data.
• Deployed a **Hadoop cluster** and submitted **Spark jobs** for distributed processing of large trade datasets, enabling efficient historical data analysis.

Software Developer
LimoSys Software — *Englewood Cliffs, NJ | February 2014 – November 2015*

Led the development of custom web applications for individual car service companies, enabling online trip reservations, fare estimates, and secure payments. These applications were deployed for external use and integrated with the company's core dispatching platform.

Key Contributions:
• Designed and implemented full-stack web applications using **Java Servlets**, **HTML**, **CSS**, **AJAX**, and **jQuery**, supporting real-time trip selection and booking workflows.
• Deployed applications on **Apache Tomcat** and **Microsoft IIS**, ensuring high availability and compatibility with client-specific environments.
• Developed backend functionality to handle fare calculation, car type selection, pickup/drop-off scheduling, and credit card payments.
• Collaborated directly with client companies to gather requirements, customize features, and deliver tailored solutions for their websites.

Senior Java Developer
Accenture — *Pittsburgh, PA | October 2012 – March 2013*

Contributed to the internal development of a billing and invoicing system for a major Blue Cross Blue Shield (BCBS) healthcare provider, replacing legacy systems across multiple regional offices. The platform enabled billing staff to generate invoices, process payments, and produce reports and receipts.

Key Contributions:
• Integrated the business logic layer with **OpenJPA** and **EJB 3.0**, ensuring efficient and scalable data persistence.
• Developed **stateless session beans** using **EJB 3.0** to implement core middleware services.
• Participated in deployment, production support, and ongoing enhancement of the application.
• Deployed the system on **IBM WebSphere Application Server** using **MyEclipse Blue IDE** within Accenture's internal engineering team.

IETM Build Coordinator

Sila Solutions Group — *Shelton, CT | November 2010 – May 2012*

Supported deployment of the Interactive Electronic Technical Manual (IETM) used by Sikorsky Aircraft Corporation's helicopter maintenance teams servicing U.S. Navy Seahawk helicopters.

Key Contributions:

• Automated build processes by writing **Perl scripts**, increasing deployment efficiency and reducing manual errors.
• Integrated up-to-date XML technical publication data into the IETM system using **Java**.
• Styled and presented XML content with **XSL stylesheets**, enhancing user readability and interface consistency.
• Executed regression testing to validate build integrity and ensure successful application delivery.

Django Developer (Internship)
Seesaw Associates — *New York, NY | June 2009 – November 2010*

Built scalable web applications for a boutique advertising agency, delivering tailored digital solutions for a variety of client campaigns.

Key Contributions:

• Developed backend functionality using **Django**, producing maintainable and scalable codebases.
• Wrote and maintained unit and integration tests with **pytest** to ensure application reliability.
• Automated deployment workflows using **Fabric**, streamlining code releases from **GitHub** to production servers.
• Created dynamic and responsive front-end components with **HTML**, **CSS**, **jQuery**, and **Bootstrap** templates.
• Collaborated closely with designers to translate wireframes and mockups into polished, user-friendly web interfaces.

EDUCATION

University of North Texas, Denton, TX
PhD – Computer Science — Present
Inducted into Phi Kappa Phi Honor Society, April 2025

Georgia Institute of Technology, Atlanta, GA
Master of Science – Computer Science — Spring 2022
Completed 36 credit hours (30 required)

Gettysburg College, Gettysburg, PA
Bachelor of Arts – Computer Science — Spring 2009

NON-DEGREE EDUCATION

Columbia University Coding Boot Camp
Completed full 24-week program — 2018

Pontifical Catholic University of Rio de Janeiro (PUC-RJ), Brazil
Graduate-level coursework in Algorithms, Computability, Multimedia, and Logic and Specification — 2014