

Zhachory Volker

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Highly accomplished Senior Software Engineer with over 12 years of full-stack development experience, specializing in Machine Learning (9+ years) and data mining (7+ years). Seeking a challenging Staff Software Engineer position focused on AI/ML within Video or Social domains. Proven expertise in designing and implementing scalable Machine Learning systems, Search and Recommendation stacks, and robust infrastructure. Adept at leveraging diverse technologies to drive significant user engagement, efficiency improvements, and product innovation. Committed to continuous learning and applying cutting-edge techniques to deliver impactful, responsible solutions.

Professional Experience

Senior Software Engineer | YouTube Search | New York, NY | March 2018 – Present

- Designed and implemented a unified ranking framework to evaluate diverse content types (shelves, playlists, channels, articles) within the same scoring space on the YouTube Search results page, **increasing overall Search Active Users (SAUs) by 2%** and **increasing CTR by an average of 25%** for multiple features in a single launch.
- Created the YouTube Search News experience by implementing clustering algorithms, NLP models, and scalable infrastructure, resulting in a **38% increase in News Click-Through Rate (CTR)** and a **10% rise (~8 Million queries) in News Searches per day** with a team of 4 SWEs.
- Led a resource optimization project achieving a **60% reduction in compute usage** through efficient metric analysis and ranking model refactoring (**estimated annual savings: \$1.8M**).
- Utilized VAEs to embed and cluster user behaviors, creating clustered user profiles adopted by 7 modeling teams and **contributing to a 5% total increase in a SAUs** across one year with my team.
- Launched a critical feature surfacing authoritative news articles for breaking news queries to combat misinformation, collaborating with Google News and **improving news user satisfaction by 13%**.
- Developed and scaled **124 key performance metrics** in Go for core ranking systems, directly supporting a **growth of 10% increase in SAUs** over three years.
- Collaborated cross-functionally with teams across YouTube and Google to improve code health, testing practices, and developer tooling, **reducing code complexity (Halstead score) by 9%** and **increasing internal documentation health score by 25%**.
- Engineered and maintained large-scale MapReduce pipelines for aggregated log analysis, providing critical ranking insights for 7 distinct modeling teams across YouTube.

Software Engineer | Google | New York, NY | March 2017 – March 2018

- Applied NLP and Machine Learning to 10,000+ articles** (RNNs, CNNs, Decision Trees) for associating user questions with relevant documents in the fact-checking corpus, which can be seen on the first page of Google current day.
- Created and maintained MapReduce pipelines (C++) for managing the size and processing of the **fact-checking article corpus which was used by 6 Large News Publishers with XXM sized audiences**.
- Contributed to the maintenance and enhancement of a **graph mining library utilized across Ads, YouTube, Research, and Maps**.
- Developed data pipelines implementing label propagation and semi-supervised learning algorithms on large-scale graphs, **increasing library adoption by 8%**.
- Developed a full-stack internal research tool using Java, TypeScript, and Angular to facilitate discovery of fact-checking articles.
- Implemented robust evaluation functions for effective model training based on a published research paper's ("Watch Your Step: Learning Node Embeddings via Graph Attention") internal implementation.

System Data & Performance Intern | Ericsson | Plano, TX | May 2015 – March 2017

- Monitored system stability and performance** using Zabbix, supporting the site reliability engineering (SRE) team.
- Developed **full-stack applications used by a 30-person IT team** to streamline internal processes.
- Managed and maintained **multiple databases containing 10-100 GB of telecom site data each** (PostgreSQL, MySQL, Cassandra, MongoDB, HBase).
- Performed data mining on site data to predict handling issues, contributing to a **12% reduction in site risks**.
- Administered ~50-100 computer systems** (Linux, Windows) and managed Hadoop clusters.
- Created internal marketing materials (videos, newsletters) that **increased R&D projects awareness by 25%**.

Contact

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- Portfolio:** zhach.me

Skills

Programming Languages:

Go, Python, C++, Java, JavaScript, TypeScript

Machine Learning & AI:

TensorFlow, PyTorch, Deep Learning, NLP, Transformers, Reinforcement Learning, Genetic Algorithms, Clustering, Label Propagation, Semi-Supervised Learning, Graph Mining, Embeddings, Ranking Systems

Data Processing & Databases:

Hadoop, MapReduce, Data Mining, Data Analysis, SQL, PostgreSQL, MySQL, Cassandra, MongoDB, HBase

Web Technologies:

Full-Stack Development (LAMP/MEAN), NodeJS, Angular, Polymer, React

Software Development:

Object-Oriented Programming (OOP), Test-Driven Development (TDD), Advanced Algorithms, Data Structures, Scalable Infrastructure Design, System Monitoring, CI/CD, Code Health Optimization

Platforms & Tools:

Linux, Windows, Jupyter Notebooks, Git, Mercurial

Soft Skills:

Collaboration & Teamwork, Communication, Problem-Solving, Conflict Resolution, Leadership & Initiative, Analytical Thinking, Adaptability, Mentorship, Continuous Learning

Education

Bachelor of Science in Computer Science

University of North Texas | Denton, TX
August 2013 – May 2018

- GPA: 3.44
- Relevant Coursework: Advanced Algorithms, Data Structures, Software Engineering, Discrete Math, Game Mechanics, Operating Systems, Artificial Intelligence
- Dean's List: Fall 2013, Spring 2015, Fall 2015, Spring 2016