

Vivek Ranjan

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In here you will notice that (a) I enjoy collaborating and delivering value by solving significant, real world problems with polyglot full-stack software engineering (b) I am backend leaning, but I have also done a fair share of frontend and infrastructure work (c) I am relentlessly discovering ways to optimize software systems and organizational software delivery processes.

SKILLS

BACKEND	Java, NodeJS, Python, PHP, SQL (MS SQL Server, Postgres)
FRONTEND	HTML/CSS, JavaScript, Typescript, React, Redux, Vue, Vuex, Jest
INFRASTRUCTURE/ OTHER	Shell scripting, Docker, AWS (Lambda, API Gateway, ECS, ECR, Fargate, ElasticBeanstalk, Cloudformation, CDK, S3, EC2, RDS, IAM, etc), CI/CD pipelines

EXPERIENCE

Capsule

Staff Software Engineer

Apr 2025 - Present

- Built an internal tool to help pharmacists validate prescriptions and benefits
- Ported existing app to NextJS and modern React
- Used observability tools like Sentry, Prometheus, Loki, etc to debug issues during on-call rotations
- Backend - Python, Django, PostgreSQL
- Frontend - NextJS, React, Vite
- Infrastructure/Other - Docker, AWS (EKS, RDS, SQS), Shell, CI/CD pipelines, Sentry, Prometheus, Loki

Renaissance Learning

Staff Software Engineer

Feb 2022 - Apr 2025

- Proposed & led project: Achieved 73% cost reduction by moving batch jobs to AWS Fargate.
- Crafted framework resulting in 40% boost in deployment frequency. Using IaC in Python with AWS CDK and Docker, this framework enabled teams to develop and deploy batch jobs with ease.
- This framework added observability to batch jobs by automatically configuring them with Datadog and Cronitor. Built a custom CDK module for Cronitor monitors.
- Helped with incidents by debugging performance issues in legacy Java monolith using observability tools like Datadog
- Backend - Python, pytest, Java, Spring (MVC), Groovy/Spock, Microsoft SQL Server
- Frontend - Vue/Vuex, HTML/CSS, JavaScript, Jest
- Infrastructure/Other - Docker, AWS (ECS/ECR, Fargate, CDK), Shell, CI/CD pipelines, Datadog, Cronitor

Lead Software Engineer

Jun 2019 - Feb 2022

- Led project: UX redesign implementation of crucial progress monitoring tool used by educators and millions of students. Modernized frontend (Vue, Vuex, Jest) and optimized backend (Java, Spring, REST, Hibernate, MS SQL Server, Groovy/Spock).
 - Proposed & led project: Eliminated 4 weeks per year of engineering time by developing a content management system using AWS Aurora serverless (Postgres), Lambdas, API Gateway, Vue, Vuex, and Jest.
 - Proposed & led project: Achieved 2X increase in deployment frequency & eliminated 10 hours per week of manual work by automating monolith deployments and introducing end-to-end testing in CI/CD pipelines using Docker, YAML, shell scripts, AWS CLI and CloudFormation.
 - Backend - Python, pytest, Java, Spring (MVC), Groovy/Spock, Microsoft SQL Server, AWS Aurora (serverless Postgres)
 - Frontend - Vue/Vuex, HTML/CSS, JavaScript, Jest
 - Infrastructure/Other - Docker, AWS (Lambda, API Gateway, ElasticBeanstalk, CloudFormation, CLI, IAM), Shell, CI/CD pipelines, Datadog
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FastBridge Learning

Technical Team Lead / Senior Software Engineer

Mar 2017 - Jun 2019

- Led project: Delivered a web application that provides easy access to millions of data points that help educators understand the performance of all students in a mid-western state.
 - Worked with the team to build a microservice serving REST APIs using Spring Boot, delivering data from a data-warehouse in AWS Redshift, and a JS-based frontend to render the data as user-friendly reports.
 - Helped rewrite our software to take advantage of a more distributed system so that we can scale and serve our growing customer base.
 - Backend - Java, Spring (Boot, JPA, Data, Data REST, MVC), JPA/Hibernate, Groovy/Spock, Microsoft SQL Server along with AWS Redshift
 - Frontend - HTML/CSS, JSP, JavaScript (ES6, webpack, babel and jQuery), Jest.
 - Infrastructure/Other - AWS (EC2, S3, RDS, ElasticBeanstalk), New Relic
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Software Engineer

Jun 2015 - Mar 2017

- 4th engineer at an early-stage EdTech startup (~10 employees). Developed features end-to-end to help educators understand needs of millions of students in reading and math.
 - Backend - Java, Spring (MVC), JPA/Hibernate, Microsoft SQL Server
 - Frontend - HTML/CSS, JSP, JavaScript, jQuery
 - Infrastructure - AWS (EC2, S3, RDS, ElasticBeanstalk)
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University of Minnesota

Full Stack Software Engineer (Part-time)

Jan 2014 - May 2015

- Using Java (Spring MVC) with HTML/CSS/JS, jQuery, and Microsoft SQL server, I added features to an existing web app to assess the reading abilities of 1000s of students and track their progress
- Helped researchers in the Department of Educational Psychology design effective assessments for students.
- Backend - Java, Spring (MVC), JPA/Hibernate, Microsoft SQL Server
- Frontend - HTML/CSS, JSP, JavaScript, jQuery
- Infrastructure - AWS (EC2, S3, RDS, ElasticBeanstalk)

EDUCATION

University of Minnesota

Master of Science - Computer Science Dec 2016

VOLUNTEERING

Astoria Digital

Community Engineer

Mar 2020 - Aug 2020

- Helped build an open-source volunteer coordination and dispatch system in use by Astoria Mutual Aid Network - <https://github.com/astoria-tech/volunteer-dispatch>
- Built a system that helps community organizers keep track of waiting times at COVID testing sites in NYC - <https://github.com/astoria-tech/nyc-covid19-testing-wait-times>