Atul Goel

Senior Software Engineer – Backend, Infrastructure and Tools

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Work Experience

Third Unicorn - Chandigarh, India   July 2023 - Present
Technical Lead

- As the pioneering Technical Lead at Third Unicorn, I led both technical and managerial aspects with minimal oversight. This role included rigorous coding, daily MR reviews and a significant turnaround for the Crickpe product, where I stabilised the platform, reduced operational costs, and improved code efficiency, leading to an 60% reduction in monthly server expenses.

- I implemented key process enhancements, transitioning the team to SCRUM and developed a CI/CD system, which led to a marked increase in deployment speed and efficiency. My efforts in talent development and process refinement across technical and QA teams resulted in a 95% decrease in user-reported issues and a dramatic reduction in helpdesk ticket volume from average of 400 to under 10 per day.

- Spearheading the development of ZeroPe, a fintech solution for the medical sector, I played a crucial role in architecting the product for scalability, targeting a user base of over 100 thousand. My hands-on involvement in code reviews and coding significantly uplifted the team's capabilities and coding standards.

Pixelberry Studios - Mountain View, CA   Jan 2020 - July 2023
Software Engineer - Infrastructure and Tools

- Revolutionized the company's CI/CD process by shifting from default Gitlab runners to **dedicated AWS runners** behind an ASG, **accelerating build times by 30 to 70%.** This **highly scalable** solution now supports hundreds of simultaneous jobs, significantly reducing wait times and enhancing the development lifecycle's efficiency. **(Gitlab, AWS EC2, AWS CDK, Networking, Security)**

- Developed a **serverless art asset ingestion** pipeline, facilitating customers to upload psd files and auto-generate game-ready assets. Also formulated a Domain Specific Language to dictate the **texture packing**, **compression** and conversion to **protocol buffers. (Java, Typescript, AWS CDK, Pub/Sub, Step Functions, CI/CD, GraphQL)**

- Co-designed the **user-authentication and authorization** system for all the company services and products for millions of users on top of **AWS Cognito. (Typescript, AWS CDK, Single Sign On, JWT, API Gateway)**

- Amplified the performance of in-house programming language by refining the **interpreter and gramma**r using **ANTLR,** subsequently integrating this as a cloud-based tool with **Atom IDE. (Interpreter/Compiler Design, Grammar, Java, Python, Shell script)**

- Facilitated the deployment of **in-house job-orchestration platform** - cloud-pipe by troubleshooting bugs and optimizing its functionality. **(Java, Infrastructure as a Code, AWS Cloudformation, Database optimizations, Caching, API Design, Debugging)**

- Created a tool to **convert JSON** data **into** an easy to read **movie-script** format. Collected the data using **visitor pattern**, wrote an **HTML generator** and transformed the html into a pdf, which was hosted on cloud and **shared using a signed URL. (Java, Typescript, AWS Lambda)**

- Created a **content moderation web service** for images as well as stories **using external AI service** with customizable parameters for multiple age-ratings. Worked tightly with the product team transforming an abstract idea into a full-fledged feature and integrated it end to end. **(Typescript, Moderation Engine, AWS)**

- Designed a comprehensive onboarding program called **Pixelberry PhD**, which is a 2 week long program that every new developer who joined had to go through to get used to the tools and processes used at different teams.
- **Acting team lead for Automation and Tools team**, managing everything from sprint planning to managing stakeholder expectations.

Big Huge Games   Jan 2019 - Dec 2019
Associate Software Engineer

- Streamlined **usability and workflow of internal admin tool website**, r**emoved all low-level access of functions by non-devs,** lowering feature testing times by half and eliminating data-entry related errors by QA completely. **(Java, Spring)**

- Implemented a **ledger system for an in-game resource** to prevent cheating and a complementary online **tool to fix the gameplay state of existing hackers**. **(Java, Spring)**

- Devised a **real-time monitoring web service for the game's Chat services** to narrow-down cause of server failures. **(Telemetry, Shell script, Backend, Java)**

Department of Psychology, Carnegie Mellon University   May 2018 - Aug 2021

Game Programmer

- Re-architected a **WebGL** based space invaders research game with **custom analytics** which **gained international recognition in academia. (Unity, C#, WebGL)**

- Designed a '**Control Center Dashboard**' for researchers to change game audio and game settings on the go and target specific settings to certain players. **(SailsJS, AngularJS, Spring Boot, Java, Dynamodb)**

- Supported two existing testing platforms and led the deployment for two new 6 months projects from external developers from start to finish. **(PhaserJs, Python)**

Param Labs   Dec 2016 - May 2017

AR/VR Game Programmer

- Re-engineered and **shipped** an existing **Samsung GearVR** game to **Google Daydream** to utilize the controller, which was featured on store upon launch. **(Virtual Reality, Unity, C#)**

- **Shipped** a mobile VR racing game to test VR-ads created by Google team and gather analytics, and **prototyped several demos** for Asus Zenfone for its launch. **(Virtual Reality, Unity, C#)**

Client Projects

Project Playgrounds - Google Experience Center   Aug 2018 - Dec 2018

Programmer/ Backend Engineer

- Partnered with external team to craft a **Digital Bartender** to highlight advancements of Machine Learning and speech recognition for Google Experience Centers. **(Dialogflow)**

- Designed a **designer/content writer-friendly pipeline** to directly edit dialogue-tree, reducing deployment times from several minutes to seconds by designing a seamless architecture between **Dialogflow, Firebase, Philips Hue API and Canvas API.**

- Designed a custom **load balancer/proxy server** to distribute requests and handle 3 times the max limit of an individual Philips Hub. **(Google Cloud Functions, Node.js, Philips Hue API)**

Miracle Workshop - Give Kids The World   Jan 2018 - May 2018

System Architect/ Pipeline Engineer

- Developed a **5 functions animatronic robot** and partnered with multiple companies to create custom show control infrastructure for controlling the animatronic, lights and sounds. **(PLC, Network design)**

- Architected **animation and content pipelines** that eliminated developer's involvement, significantly reducing iteration times and **created a Maya plugin that converts visual animations into motor rotations** and automatically smooths out jerks and fast movements. **(Java, Python, Maya3D)**

- Iterated and play-tested with several end users to fine tune the UX to be beginner friendly and without any special training. **(User testing)**

Education

Carnegie Mellon University, Entertainment Technology Center, Pittsburgh, PA   - May 2019

Master of Entertainment Technology

Relevant Courses: Building Virtual Worlds, Visual Storytelling , Java for Application Programmers, Data Structures and Algorithms

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Vellore Institute of Technology University, India   - May 2017

Bachelor of Information Technology - Network Programming

Relevant Courses: Computer Networks, Computer Graphics, Operating Systems, Introduction to Neural Networks, Advanced Java

Skills

- **Primary languages:** Java, Typescript/Javascript, C#
- **Additional languages:** Python, C/C++, Shell Script
- **Database/Caching:** SQL, Redis, Memcache, NoSQL, DynamoDb
- **Technologies:** Pub/Sub, Protocol Buffers, EC2, Lambda, GraphQL, REST, API Gateway, CDN, Loadbalancer
- **Frameworks/Libraries:** Spring, Node.js, AWS CDK, AWS SDK, JUnit, Jest, lerna
- **Version Control:** Git (Gitlab/ Github), SVN, Perforce, Jfrog Artifactory,