Piyush Divyankar

https://www.linkedin.com/in/piyush-divyankar-7a8848140/

(+91) 9769169675
piyush0divyankar@gmail.com

PROFILE

- Currently working as a backend software engineer and game developer at Mirana Toys.
- Backend and Game developer, with experience in Microservices, Databases, Django, Golang, REST, GraphQL, Python, C#, Unity, and, C/C++.
- Worked as a **Quant Analyst** at Motilal Oswal and as a Freelance **Software Developer**.
- Attempted UPSC-CSE in 2019, 2020, and 2021, and **cleared UPSC Prelims in 2020, and 2021, with Mathematics as the optional subject.**
- Enthusiastic about painting, reading, programming, problem solving and mathematics.

EDUCATION

- **Indian Institute of Technology, Bombay**   Mumbai

  Bachelor of Technology in Materials Science (GPA: 8.44/10)   *July 2012 - Apr 2016*

  Master of Technology in Materials Science (GPA: 8.44/10)   *May 2016 - Apr 2017*

SKILLS

- **Software Development:** Proficient in Python, Go, Django, JavaScript/HTML/CSS, C#(.NET Framework), Web Development, Agile Methodologies, Git, Linux, SQL.
- **Game Development:** Skilled in Unity, NetCode, UnityServices, and AR object tracking using Vuforia.
- **Backend Development:** Experienced in microservice architecture, REST/GraphQL API, data management, payment systems integration, and deployment using AWS.
- **Quantitative Analysis:** Experience with Numpy, Pandas, Time Series Analysis, Mathematical Modelling, etc. as a Quant Analyst at Motilal Oswal.
- **Mathematics:** Strong background in mathematics with UPSC Prelims cleared twice, specializing in Mathematics as an optional subject.
- **Problem Solving:** Excellent problem-solving skills demonstrated through engineering competitions and research projects.

WORK EXPERIENCE

Software Engineer and Game Developer, Mirana Toys   *(February-2022 - Present)*

- **Mirana-Web Core Backend**
  - Architected and implemented a **scalable microservice architecture for seamless data replication** and high system performance.
  - Lead a team to develop user account management systems with personalized profiles, inventories, and configuration data, enhancing user engagement, **serving over 10k users**.
  - Designed and implemented leaderboard services, driving user competitiveness and retention, using Python-Django, REST Framework, Redis, and PostgresQL.

- **Game-data Microservice**
  - Engineered a **high-speed asynchronous service** for real-time game data updates, resulting in accurate and reliable gameplay information for over **1000 concurrent users per node.**
  - Leveraged **Golang, Gin-Gorm, AMQP, and Redis** to deliver a performant and scalable solution, **reducing development and maintainence cost by 90%.**
  - **Orchestrated deployment on ECS using Docker**, optimizing efficiency, ease of maintenance and cost to **less than 50$ per month**.

- **Mirana-wallet microservice**
  - Built a **robust microservice for seamless management of in-game currency**, integrating with popular payment methods like Google Play, iStore, and Razorpay.

- Developed product and balance management functionalities, ensuring a **smooth user experience and revenue generation of about 1000 transactions per month.**
- Employed Golang, Gin, and Gorm-Postgres to create a fast and secure solution.

- **Unity Game Development**
  - **Refactored and stabilized a challenging codebase,** eliminating over 50 bugs and transforming the game into a polished and enjoyable experience. **Reduced crash reports by 97% and driving app downloads to 10k.**
  - Enhanced immersion and interactivity with **cutting-edge AR object tracking using Vuforia.**
  - **Spearheaded the implementation of multiplayer features,** expanding the game's social engagement and replayability.

Backend Engineer and Analyst, Freelance   *(August-2018 - December-2019)*
- Designed the **mathematical model and implemented** a **cryptocurrency** based **gambling system with testable fairness**, which maintained house edge.
- Designed, developed and tested **backend APIs for Tepey.com** using Python, Django REST-Framework, and SQL. Deployed this API using AWS.

Quant Analyst and Developer, Motilal Oswal   *(July 2017 - August-2018)*
- Developed a prototype of **live stock price and market feed broadcaster**, with TCP and Web-Socket Support using **Python's twisted-library** and deployed internally using **AWS**.
- Created a **GARCH and Black-Scholes-Merton** based price **volatility predictor and option premium calculator** using python, and historical stock price data.
- Developed **data access and data analysis backend for the Advisory Dashboard**, for providing client data, market news, and research team **recommendations to the 100s business advisors**.
- Developed **custom order execution request algorithms** for Institutional Equities division to execute orders valued upto 100cr, totaling over 1000s of crores in value, using C#.
- Analysed customer data to generate insights to improve customer trading behaviour.

RESEARCH EXPERIENCE

Interfacial Energy Calculation in Ni-Al Superalloys   *(July 2016 - June 2017)*
- Studied the changes in interfacial energies in **Nickel Aluminum Superalloys**, at low curvatures of the interface using **Monte Carlo method**, and **statistical analysis**.
- **Implemented a FCC lattice** for the crystal structure, and used it for statistical calculation of bond energy, and bond length. Matching these values with physical constants.
- Performed **phase change simulations using Monte Carlo method** and studied its impact on bond lengths, strains, and surface energies at in range of 10^9 cells.
- Developed in C/C++, using auxiliary tools like doxygen, gdb, Valgrind, Octave, GNU-Plot etc.
- *Achievement: Was awarded an **AA grade** for my work.*

INTERNATIONAL COMPETITIONS

ASME Student Design Competition 2014 | Montreal, Canada   *(July 2013 - April 2014)*
- Designed a versatile remote aerial vehicle capable of carrying cargo, navigating obstacles, and deploying payloads.
- Led and trained a team of 12 students in fabricating Quadrotor frames using innovative materials and techniques.
- *Winner,**Asia Pacific level competition**, BITS Pilani, India .*

ASME Student Design Competition 2013 | San Diego, California   *(October 2012 - April 2013)*
- Developed a remote inspection vehicle with live feed control for hazardous environments and efficient interaction with surroundings.
- Engineered mechanical grippers, including an autonomous design renowned for its exceptional speed and dexterity.
- *Winner*, ***Asia Pacific, Singapore**.*
- *Runner Up*, ***World Finals, San Francisco**.*