

# Anant Kumar Gupta

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## EDUCATION

### University of Edinburgh

Edinburgh, United Kingdom

Bachelor of Engineering in Computer Science (4-year programme)

Sep 2021 Onwards

- Relevant Courses: Algorithms & Data Structures, Data Science, Computer Systems, Software Engineering, Reasoning and Agents, Object Oriented Programming
- Projected First Class Honours (On track with a grade average of 85%)

## WORK & LEADERSHIP EXPERIENCE

### Institute for Computing Systems Architecture

Edinburgh, United Kingdom

Research Intern, School of Informatics

February 2023 – July 2023

- Interned under Prof. Vijay Nagarajan and two Research Associates to help develop a DSL (domain-specific language) for processors using Lean4, a functional programming language.
- Constructed a 5-staged pipelined MIPS Processor using the DSL, rigorously testing for bugs and proposing additions to the language for smoother simulations.
- Conducted code refactoring, correction, documentation and created a continuous integration pipeline for GitHub.

### Edinburgh Scientific Research Association

Edinburgh, United Kingdom

Head of Informatics and Mathematics

September 2022 – Ongoing

- Contributed to the revitalization and reconstruction of ESRA, a student society dedicated to fostering scientific research (comprising 50+ members).
- Oversaw various research endeavours within the field of informatics, such as employing cellular automata for file compression and utilizing deep learning for diabetic retinopathy detection.
- Showcased these projects at ESRA's annual conference and secured additional funding for the society.

### Centrum Wealth Ltd. – wealth management and investment firm in India.

New Delhi, India

Intern

July 2022 – September 2022

- Produced more than fifteen comprehensive portfolio reports for clients, offering clear insights into portfolio performance using advanced Excel tools.
- Conducted in-depth analysis and comparative assessments of Alternative Investment Funds, considering critical factors such as historical performance, risk metrics, and investment strategies to guide informed investment decisions.

### Tech Mahindra Ltd. - one of largest IT companies in India

Delhi NCR, India

Analytics Intern

May 2022 – July 2022

- Designed and developed dynamic PowerBI dashboards to extract actionable insights from real-world data, using SQL for database management when necessary.
- Conducted comprehensive research and authored reports on diverse industries and topics, including the metaverse and cryptocurrencies, contributing valuable insights and knowledge to support informed decision-making.

## PROJECTS

### Movie Recommender (Web App)

Developed a web app for movie recommendations using machine learning (cosine-similarity and collaborative filtering). Utilized HTML, CSS, and JavaScript for the front end, with Python, Flask, and SQL for the back end.

### Portfolio Manager (Web App)

Designed a web app simulating a stock portfolio, integrating real-time stock prices via the IEX API. Used app to create awareness about investing by organising a workshop at a school in New Delhi, attended by over 150 students.

### Airbnb Edinburgh (Data Science)

Conducted a comprehensive analysis of Edinburgh Airbnb listing prices, employing advanced data science techniques, including data cleaning, complex modelling, regex, PCA, and data visualization tools like Matplotlib and Seaborn.

Collaborated within a team using GitHub for version control.

### Solar System Simulation (Physics Simulation)

Created a 2-D simulation of the solar system in Python, implementing the Beeman Integration Scheme for modelling movement. Leveraged libraries such as matplotlib and numpy to compute and visualise data. Produced a 10-page report documenting findings for various experiments such as energy conservation, optimum satellite launching, etc.

## SKILLS, ACTIVITIES & INTERESTS

**Technical Skills:** Proficient - Python, Haskell. Intermediate – Java, C/C++, SQL. Basic – C#, JavaScript, CSS.

**Certifications & Training:** CS50: Intro. to Computer Science, CS50: Artificial Intelligence with Python

**Activities:** InfPals Leader – Volunteered to help first-year students at the school of informatics with key concepts, Director of Marketing at Edinburgh University Indian Society, Head Alternatives Sector at Edinburgh University Trading and Investing Club.

**Interests:** Painting, Flute (Grade 6), Machine learning, Investment Portfolio Management, Filmmaking.