

Nima Karshenas

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Personal Profile

I'm a Final Year MEng Electrical & Electronic Engineering student at Imperial College London. I have a deep passion for creativity within engineering, and am fascinated with its potential in tackling social, and economic issues all around the world. I am determined, and indeed adamant that the skills that I have so fortunately developed, be used for the betterment of lives and not the exploitation of them for profit. For this reason, I am now only interested in projects that are in some way, directly, or indirectly, dealing with humanitarian, or environmental issues.

Education

Imperial College London

MEng Electrical and Electronic Engineering

London, UK

Sept 2018 - Current

I have recently completed my final year, thus far averaging a first-class. Relevant completed modules: Algorithms and Complexity [A], Probability and Statistics [A], Machine Learning [A+], Digital Signal Processing [A], Linear Algebra [A], Adaptive Signal Processing [A+], Deep Learning [A+], Real-time Signal Processing [A], Collective Intelligence: The Philosophy and Psychology of Thinking in Groups and Crowds [A].

Monk's Walk School

Secondary School

Welwyn Garden City, UK

Sept 2011 - July 2018

- **A-Levels** : Mathematics [A*] Further Mathematics [A*] Physics [A*]
- **GCSEs** : 10 [A*] 2 [A]

Work Experience

Playstation, Sony Interactive Entertainment (SIE)

3D Audio Intern Engineer

London, UK

Aug 2021 - Aug 2022

- Collaborated with a five-person team on the ongoing 3D Audio HRTF research project. Helped devise prototypes and contributed to the codebase in both Python and C++ over a period of 6 months.
- Spent 3 months researching and developing optimisations for existing ambisonic filtering algorithms, improving the runtime by over 10x whilst maintaining accuracy.
- Spent 3 months designing and implementing a prototype for a Monte Carlo denoising network for video based on ResNet alongside the Graphics team.
- Was on a winning team of 3 in a company-wide hackathon, which looked at developing controller add-ons for enhanced haptics.
- **Technical Skills**: Python with NumPy, Matplotlib, Pandas, Scikit-learn, openCV, Pytorch, Keras, Real-time Signal Processing, Deep Learning Network Design, Javascript with React, React Native, C++, Git.
- **Soft Skills**: Project Planning, Collaboration, Time Management, Communication, Presentation skills, Report Writing.

University Projects

A Collective Understanding of Happiness - Final Year Solo Project

Imperial College London

London, UK

Oct 2022 - Jun 2023

Designed and Implemented a GRU-based Actor-Critic Dual Recommender system that recommends users a philosophy extract to consider and an activity to complete based on past interactions, personality, age, and location. Based on user-feedback regarding the effect of the recommended items on their experienced level of happiness, parameters are updated to maximise the user's long-term experienced happiness, and model parameters can be expected to derive salient conclusions about the nature of population-wide experienced happiness. Project involved research in Sociology, Psychology, Philosophy, Natural Language Processing and Reinforcement Learning.

COVID-19 and better connectivity - 3rd Year Project

Imperial College London

London, UK

May 2021 - Jun 2021

Spent 2 months devising a plan for Greenwich Council to bring cheaper, and faster internet connectivity to lower-income households. Along with this, I acted as the sole front and back end developer of the app 'Greenwich Together', which allowed the council to distribute important COVID-19 information, residents to talk with one another in voice channels, and a messaging service for a direct line of contact between residents and the council. The code for the app can be found on my github page at the top of the page.

Real-time Voice Removal from Music

London, UK

Imperial College London

Jan 2021 - March 2021

Developed a real-time voice removal algorithm (for music) on a C2000 Texas Instruments board, first developed on MATLAB and then implemented onto the board in Simulink.

Fall Detection - 2nd Year Design Project

London, UK

Imperial College London

Oct 2019 - March 2020

Lead software development in a team of 8 students designing a fall detection wristband and a home tablet GUI tailored for people suffering with dementia and are living at home alone.

Skills & Roles

Programming	Python (Pandas, PyTorch, NumPy, Scikit-learn. etc.), C/C++, HTML/CSS, JavaScript, MATLAB, React Native
General	LaTeX (Overleaf), Microsoft Office, Git, Technical Documentation, Technical Presentation, Essay writing.
Tuition	Spent 3 years from 2016-19 as a volunteer at my local Maths tuition center. I have been a private tutor for A-Level maths and physics students from 2019 to present day.

Interests

Philosophy	I love reading and dissecting Philosophy texts and then having discussions regarding the ideas with my peers.
Music	I thoroughly enjoy discovering new music from all over the world, and going to live events with local musicians.
Poetry and Art	Ever since my teenage years, I have become infatuated with painting and writing poetry, both of which help me disconnect and express the ideas that sometimes become engulfed in the chaos of every day life.
Sports	I am a lifelong fan and player of both Tennis and Football, but have developed a recent passion for Basketball. I have also recently begun partaking in weekly salsa and bachata lessons.

Languages

English	Full Proficiency
Farsi	Native proficiency
French	Conversational, not fully proficient