Anshuman Sinha

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Education

- **National Institute of Technology Karnataka (NITK)** — Surathkal, India
  Bachelor of Technology — *Jul 2018 - May 2022*
  - **Major**: Electrical Engineering; *GPA: 9.16 /10*
  - **Minor**: Information Technology; *GPA: 9.00 /10*

Work Experience

- **Texas Instruments** — Bangalore, India
  Software Intern — *May 2021 - July 2021*
  - **Data Analytics**: Analysed time and space performance of 500+ trained Deep Learning models with layer-wise data. Also implemented my electronics core knowledge to automate memory optimisation.
  - **Web Development**: Used Streamlit, Altair, Plotly to design a cached data-intensive and interactive visualisation tool featuring data flow graphs, bokeh plots, et cetera catering to multi-dimensional data.

Research Experience

- **European Bioinformatics Institute (EMBL-EBI)** — Cambridge, UK
  Bachelor's Thesis: Uhlmann Group — *Dec 2021 - Present*
  - **Reinforcement Learning-based spline fitting & Object detection**: Developing an algorithm to detect cellular and sub-cellular entities in bio-images by formulating continuous control on spline models as an RL paradigm.

- **Carnegie Mellon University** — Remote
  Research Intern: Xu Lab — *July 2021 - Sep 2021*
  - **Image Processing**: Analysed 3D cryo-ET images of sub-cellular tomograms and subtomograms to detect and classify particles using both labelled and unlabelled data. Implemented PUB-SalNet and Double U-Net.

Projects

- **Voice Navigator** — NITK
  ISTE Student Club — *Nov 2020 - Mar 2021*
  - **Description**: Open-source Computer Vision app that implements real time object detection and monocular depth estimation. The aim is to inform the visually impaired about objects in the frame with their relative proximity and produce a detailed audio output to help the user navigate in real time.
  - **Tools**: Yolov3, TensorFlow, PyTorch, Flask, HTML. <Link>
- **Music Spectrum Analyser** — NITK
  IEEE Student Member — *Oct 2018 - Mar 2019*
  - **Description**: Music spectrum analyser displays the frequency bands of frame size 2048 vs amplitude on a physical 5*8 LED matrix. Input audio is custom sampled to match Arduino specifications to avoid data buffering on ports.
  - **Tools**: Arduino Uno, LED matrix, Python, C. <Link>

Skills

Technical Skills:

- Operating Systems: Windows, Linux
- Programming Languages: Python, Matlab, Java, C
- Tools: Git, PyTorch, TensorFlow, MySQL, Streamlit

Relevant Courses

- **Computer Science**: Data Structures and Algorithms, Web Technologies and Applications, Database Management Systems, Deep Learning, Neural Networks, Data Analytics
- **Mathematics**: Linear Algebra & Matrices, Probability Theory & Applications, Multivariate Calculus, Probability & Statistics, Graph Theory

  On Coursera: Mathematics for Machine Learning Specialization by Imperial College of London
- **Electrical Engineering**: Signals & Systems, Digital Signal Processing, Fourier & Wavelet Analysis, Linear Control Theory

Achievements and Extracurricular Activities

- **Special Mention**: Texas Instruments Inspire Hackathon 2021
- **Special Mention**: Walmart Labs' Hackathon NITK, 2020
- **Award**: Undergraduate Merit Scholarship NITK, 2018-22
- Ranked 4819 out of 1,259,000 (**99.6 percentile**) in All India Engineering Entrance Exam 2018
- **Award**: Junior Scholar, Jagadis Bose National Science Talent Search 2016
- Senior Diploma in Tabla (Hindustani Classical) : Allahabad Gharana
- Held positions of responsibility at technical and at literary clubs in college