ANEEK ROY

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EDUCATION

New York University - *MS in Computer Engineering*   **Sept 2022 - May 2024**
Courses : Computer Vision, Machine Learning, Deep Learning, Robot SLAM   *New York City, USA*

Jadavpur University - *BE in Computer Science and Engineering - CGPA - 8.0*   **Aug 2014 - May 2018**
Courses : Data Structures and Algorithms, Natural Language Processing, Operating Systems, Computer Networks   *Kolkata, India*

TECHNICAL SKILLS

Languages: Python, Java, C, C++, JavaScript, SQL, NoSQL, R, XML, HTML, CSS

Technologies/Frameworks: Kubernetes, Kafka, Docker, Redis, Maven, PostgreSQL, AWS, Spring, ReactJS, Redux, QT, AngularJS, NodeJS, PolymerJS, Git, MongoDB, PyTorch, Keras, TensorFlow, OpenCV

EXPERIENCE

GE Healthcare | Bangalore, India | Software Engineer   **July 2018 - August 2022**
- Simplified and centralised system interaction logging to improve system boot time by $\approx 20\%$ and compile time improvement by $\approx 30\%$ while working for ECG division of Diagnostic Cardiology team.
- Implemented security protocols for GDPR compliance of ECG firmware upgrade and improvement of data governance.
- Designed system to filter noise in ECG wave-forms reducing warm up time for signal capture by $\approx 15\%$.
- Prototyped AR software to assist paramedics and physicians with ECG lead placements.
- Setup infrastructure for offline support of critical features in app used field engineer using Chrome service workers
- Integrated a geolocation based inventory management and procure system for on location support of field engineers.
- Migrated Billing and Financial Engine from internal cloud infrastructure to AWS.
- Created a tool for cost rollup for products belonging to all modalities, which improved cost tracking and reduced time spent by resource managers by $\approx 30\%$.

Samsung Research Institute | Bangalore, India | Software Engineering Intern   **May 2017 - July 2017**
- Designed and implemented a system for developers to export compatible Google web store apps to Tizen Web Ecosystem.
- Worked on json and manifest parsing along-with settings, privilege and certificate management for both the systems for fully functional integration from user perspective for a test set of around 100K apps.

PROJECTS/ACHIEVEMENTS

- Designed a mouse pointer manipulation system guided by real time detection of hand gestures and fingers as a Summer Research Intern in ECSU, Indian Statistical Institute, Kolkata. **Presentation** — **Video** — **Project Report**
- Undergraduate Seminar on Artistic Style Transfer Using Convolutional Neural Networks. **Seminar Slides** — **Abstract**
- Designed a gesture controlled droid using accelerometer and arduino to win the College-level Robotics Competition.
- Higher Secondary Exam 2014. Received Letter of Appreciation from HRD minister of India for being top 0.1% in CBSE.
- WBJEE General Merit Rank - 270 out of 200k candidates. Top 1% of JEE-MAINS, JEE-ADVANCED out of 1 Million candidates.

RESEARCH INTERNSHIPS

Jadavpur University | Kolkata | Undergraduate Resarch Assistant   **May 2016 - July 2018**
- Music Emotion Recognition Tasks on MIREX,Sound Tracks and Media-Eval datasets through supervised machine learning models. Achieved an improvement of 6-10% in accuracy over the state-of-the-art methods.
- Devised a computer vision system based on optical flow tracking through video processing to classify crowd motion pattern.

R.C. Bose Centre for Cryptology, ISI | Kolkata | Undergraduate Summer Resarch Intern **May 2015 - July 2015**
- Formulated a distributed approach for batch wise GCD computation of RSA moduli to determine the biases in Randomness of Public Keys generated using RSA encryption scheme.
- Collected 42 million HTTPs public certificates from internet and found almost 0.4% sites vulnerable due to shared primes in RSA. Developed a fully parallel processing method for batch wise GCD Computation.

PUBLICATIONS

- Sarkar, R., Choudhury, S., Dutta, S., **Roy, A.**, & Saha, S. K. (2020). Recognition of emotion in music based on deep convolutional neural network. ↗ Multimedia Tools and Applications, 79(1), 765–783.
- **Roy, A.**, Biswas, N., Saha, S. K., & Chanda, B. (2019). Classification of moving crowd based on motion pattern. ↗ In 2019 IEEE region 10 symposium (tensymp) (pp. 102–107). IEEE.
- Kumar, V., **Roy, A.**, Sengupta, S., & Gupta, S. S. (2017). Parallelized common factor attack on RSA. ↗ In International conference on information systems security (pp. 303–312). Springer.
- Sarkar, R., Dutta, S., **Roy, A.**, & Saha, S. K. (2017). Emotion based categorization of music using low level features and agglomerative clustering. ↗ In National conference on computer vision, pattern recognition, image processing, and graphics (pp. 506–516). Springer.