ADITYA JYOTI PAUL

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EDUCATION

B.Tech. Computer Science and Engineering — *SRM Inst. of Science and Technology* — *2021*
ISC (XII) Comp Sc, Math, Physics, Chem, English, Bengali — *M.P. Birla Foundation H.S. School* — *2017*

SUMMARY OF SKILLS

- *Machine Learning: TensorFlow, PyTorch, MXNet, AWS SageMaker, Google ML APIs, GraphLab*
- *Software Language Proficiency: Python, Java, C++, C, MATLAB, Go, Julia*
- *Application Development Platforms: Vim, Linux, Git and various Open Source development and collaboration tools.*
- *Interpersonal skills: Leadership, Critical thinking, Collaboration, Project Management, Public Speaking*

RESEARCH

Cognitive Applications Research Lab (CARL), SRM IST, **Founder and Team Lead** *Nov 2018 – Present*

- *Encouraged students to participate in Research, flattening the learning curve in CS/AI Research.*
- *Conducted 10+ workshops on Research methodology, AI and Computer Vision, Human-Machine Interaction.*
- *Directly worked with our team in their papers, 7 papers selected for Research Day prelims and 3 gold medals.*
- *Led the Research and Development domains, and strategized the PR, marketing and web/social media outreach.*

IEEE SRM Student Branch, SRM IST, **Research Head** *Aug 2020 – Present*

- *Headed the RnD wing, designing papers, guiding students and planning events*

Samsung Research Institute, Bangalore, India, **Machine Learning Research Intern** *Oct 2019 – Aug 2020*

- *Online Handwriting Recognition for Bengali and Tamil, for Samsung Devices from pen-up pen-down data.*
- *Tested different architectures and features like Bezier curves for accuracy and efficient deployment on edge devices.*

SPARC Research Initiative, SRM IST, **Student Research Assistant** *Jun 2019 – Jan 2020*

- *Research work titled "Prognosis of Microaneurysm and Early Diagnosis System for Non-Proliferative Diabetic Retinopathy using deep Convolutional Neural Network"; amongst top 20 projects in ExploreML Bootcamp at Google.*
- *ML and Expert System inspired architecture was proposed that could explain the output level as well, aiding doctors.*
- *Collaboration with UC Davis, funded by IIT Kharagpur and Ministry of Human Resource Development, Govt of India.*

TEACHING and MENTORSHIP

Google AI, Explore ML Facilitator *Jun 2019 – Present*

- *Amongst the first 50 students piloting Google's Explore Machine Learning program in India.*
- *Impacted 1000+ students and faculties in and around Chennai, through numerous workshops and online sessions.*
- *Covered introductory to advanced topics, from foundational statistics to scalable cloud deployment scenarios.*

Edubacus, Trainer *Aug 2020 – Sep 2020*

- *Designed and recorded all the training modules for a foundational Machine Learning course.*

HunarPro, Trainer *Jun 2020 – Jul 2020*

- *Delivered 24 hrs of live lectures over 8 days to 50+ students in applied ML and Computer Vision.*

Google CodeIn, Mentor at TensorFlow *Nov 2019 – Jan 2020*

- *Mentored 13-18-year olds in their first steps in Open Source at Google CodeIn with TensorFlow.*
- *Created quizzes, programming tasks like classification and object detection, focusing on TF2.0.*

GirlScript Chennai, Technical Head and Research Mentor Dec 2019 – Apr 2020

- *Helped in planning and conducting workshops, coordinating the technical domain.*
- *Helped participants break into* research*, develop methodologies for their experiments etc.*

Level Infinite, Course Instructor Jun 2017 – Jul 2017

- *Created a course on Java from scratch, designed questions and graded solutions, with one-on-one doubts clearing.*

OTHER EXPERIENCE

Heliyon (an Elsevier Journal), Reviewer *April 2020 – Present*

- *Reviewed papers on Computer Vision, Psychology, AI and Clinical Medicine.*

Deeplearning.ai, Ambassador *April 2020 – Present*

- *Raising awareness about ML and Research in that field amongst members of the community.*
- *Conducted numerous workshops on various topics like Statistical Methods, AI in Healthcare, GCP and AWS.*

Hack The Mountains, Speaker and Mentor *Aug 2020 – Oct 2020*

- *Mentored the students participating in the hackathon for the AI, IoT and Healthcare tracks*

JP Morgan Chase & Co, Software Engineering Intern *Dec 2019 – Jan 2020*

- *Worked on Establishing Financial DataFeed, Frontend Web Development and Data Visualization with Perspective*

Cognizant Student Team, Member *Feb 2019 – Feb 2020*

- *Workshops on Image Processing and Natural Language Processing, and Cognizant team-building activities*

SRM Team Robocon, Member *Apr 2017 – Mar 2018*

- *Designed 6-DoF Stewart platform from scratch taking care of Coding and Electronic components, and other projects*
- *Designed Image Acquisition and SLAM for Automatic Bot and Drive Control for Manual Robot for AbuRobocon 2018.*
- *Simulated throwing mechanism of the Automatic Robot using MATLAB and Simulink for dynamic real time control.*

JOURNAL PUBLICATIONS

1. Paul, A.J. (2020), A Randomized No-Loss Expert System to Play Tic Tac Toe like a Human, Cognitive Computation and Systems, IET (Published)
2. Murali, P., Paul, A.J., Muthu, J.S., An Adaptive-Selective Image Encryption with Orthogonal Polynomials, Chaos, LU decomposition and Square-wave Shuffling, Multimedia Tools and Applications, Springer (Under Review)
3. Murali, P., Niranjana, G., Paul, A.J., Muthu, J.S., Domain Flexible, Selective Image Encryption with Edge Extracted ROI Based on Genetic Operations, Chaos, Square-wave Diffusion and Orthogonal Polynomials Transformation, Journal of Ambient Intelligence and Humanized Computing, Springer (Under Review)
4. Paul, A.J., Murali, P., Muthu, J.S., A Selective Block Cipher Image Encryption Algorithm based on Chen Hyperchaotic System, Improved Logistic Map and Square Wave SFC (In preparation)

CONFERENCE PUBLICATIONS

1. Paul, A.J., Recent Advances in Selective Image Encryption and its Indispensability due to COVID-19, RAICS 2020, IEEE (Published)
2. Paul, A.J., Mohan P., Sehgal S., Rethinking Generalization in American Sign Language Prediction for Edge Devices with Extremely Low Memory Footprint, RAICS 2020, IEEE (Published)
3. Muthu, J.S., Murali, P., Paul, A.J., An efficient analysis of the Behavior of 1D Chaotic Maps using 0-1 Test and Three-State Test, RAICS 2020, IEEE (Published) (Published)
4. Mohan P., Paul, A.J., Chirania A., A Tiny CNN Architecture for Medical Face Mask Detection for Resource-Constrained Endpoints, ICEEE 2021, Springer (Accepted)

ACHIEVEMENTS AND AWARDS

- **Gold Medals and Best Research Paper Awards** amongst 5k+ students and Ph.D. research faculties from Dept of CSE in SRM for **2 consecutive years**, for the papers "A Randomized No-Loss Algorithm to Play Tic Tac Toe like a Human" in 2019 and "An efficient analyses of the Behavior of 1D Chaotic Maps using 0-1 Test and Three-State Test" in 2020.
- **Two Time Scholarship Recipient** from Facebook in 2019 and Nutanix in 2020 for pursuing Secure and Private AI and Hybrid Cloud respectively, access provided through Udacity.
- **Google AI ExploreML Facilitatorship**, and was also selected amongst the top 20 facilitators in the country.
- **Research recognition from SRM IST and UC Davis, California** for research contributions towards curing Non-Proliferative Diabetic Retinopathy with AI, a disease affecting over 1 billion worldwide.
- **Appreciation from Samsung Research Institute**, for designing a prototype architecture and pipeline for edge deployment of Bengali handwriting recognition in Samsung devices from pen-up pen-down data.

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