europass

Shreyasvi Natraj

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WORK EXPERIENCE

01/07/2021 – CURRENT – Geneva, Switzerland
CERN (IT-DI-EFP) – TECHNICAL STUDENT

- Working on developing terraform & ansible scripts for EOSC Testsuite for high energy physics & deep learning workload benchmarking across different Cloud computing providers and developed dashboard for presenting the results.
- Presented project in EGI Conference 2021 and won best demo competition.

*(**Supervisors:** Joao Fernandes)*
Terraform, ansible, kubernetes, docker, HPC, Cloud Computing, GCP, Azure, AWS, IBM Cloud, Deep Learning, Data Science.

01/02/2019 – CURRENT – Geneva, Switzerland
NATIONAL CENTER FOR COMPETENCE IN RESEARCH SYNAPSY (PROF. MARIE SCHAER'S RESEARCH GROUP) – STUDENT RESEARCHER

- Developing several deep learning screening tools for carrying out automated screening of autism spectrum disorder & comparing examiner's performance with neural network's performance.
- Developed deep neural network paper published under Nature scientific reports.
- Secured Swiss National Foundation Sinergia grant for Research group.

*(**Supervisors:** Marie Schaer, Thomas Maillart)*
Baobab cluster, *Mvpose, VIBE, PyTorch, R, Keras, Openpose, TensorFlow, OpenCV, Pandas, Big Data Handling, Flask, ShinyApps, Php*

04/06/2018 – 31/08/2018 – Geneva, Switzerland
CERN (IT-DI-UN) – OPENLAB SUMMER STUDENT

- Developed automated damage analysis extraction tool for stereo image pair & shuttle radar topography-based digital elevation models and structure point data for Aleppo, Syria & Herat, Afghanistan.
- Developed mechanical turk web instances for refugee camp satellite image polygon data generation. (Talk)
- Implemented event tracker for social media-based disaster data collection tool called E2MC
- Carried out ionized gas simulations using Garfield++ to determine ionization/excitation rates, gain curves and penning effect transfer probabilities.(Github Repo)

*(**Supervisors:** Lars Bromley, Francois Grey, Sofia Vallecorsa)*
Big Data Handling, Pandas, OpenCV, AWS M-Turk, GCP, HTML, CSS, JS, QGIS, Pybossa, HDBSCAN, KNN, DBSCAN, Garfield++, Root

03/07/2017 – 26/08/2017 – Geneva, Switzerland & Beijing, Shenzhen, China
UNIVERSITY OF GENEVA -TSINGHUA UNIVERSITY INITIATIVE – SUMMER STUDENT

- Implemented multiple CNN models for object detection and trash classification in an automated trash sorting system.
- Successfully generated annotated dataset from crude data using crowdsourced Zooniverse campaign and launched Alcrowd challenge to create a text detection neural network-based portable low-cost scanner for automated digitalization of UNOG archive data.
- Contributed to making SPI for FPGA-RPi communication (cosmic pi).

*(**Supervisor:** Francois Grey, Colin Wells)*
OpenCV, TensorFlow, GCP, Microsoft Azure Services, Xilinx Vivado, VHDL, Raspberry Pi, Lattice ICE40HX8

01/05/2016 – 30/06/2016 – Bangalore, India
GRAVIKY LABS (MIT MEDIA LABS OFFSHOOT) – SUMMER RESEARCH INTERN

- Developed an electrostatic system for a device called Kaalink to convert PM2.5 into Air-Ink
- The project was showcased in a documentary at the Cannes Film Festival.

*(**Supervisors**: Anirudh Sharma, Nikhil Kaushik)*
Solidworks (3D Modeling & Simulation), Manufacturing/assembly, Dry Lab Skills

PUBLICATIONS

Using 2D Video-based Pose Estimation for Automated Prediction of Autism Spectrum Disorders in Preschoolers

Nada Kojovic, Shreyasvi Natraj, Sharada Prasanna Mohanty, Thomas Maillart & Marie Schaer, Nature Scientific Reports July 2021 (DOI)

EDUCATION AND TRAINING

01/05/2015 – 30/05/2019 – Bangalore, India
R.V. COLLEGE OF ENGINEERING – Bachelor of Engineering

- **Course:** Biotechnology, **CGPA:** 8.55/10,
- Graduated First Class with Distinction, Awarded Best Outgoing Student Award, Class of 2019

09/09/2019 – 01/07/2022 – Geneva, Switzerland
UNIVERSITY OF GENEVA – Masters of Science

- **Course:** Neuroscience under Prof. Marie Schaer's Research Group

VOLUNTEERING PROJECTS, ACHIEVEMENTS, SKILLSET & INTERESTS

Volunteering Projects

• **Personal COVID Risk Calculator**: Developed Personalized COVID Risk of infection Calculator for daily activities under *Dr. Christin Glorioso.*
• **Insect Tracking:** Used Lime software-defined radio (SDR) in order to track insects and their behavior. *(NCBS, Bangalore-India, Project under Dr. Sharon Olsson)*
• **Casie (Context Acquired detail Sensing in Indoor/outdoor Environment):** Implemented a pseudo-deep-leaming model to compare results from multiple machine learning models for emotion analysis using voice and image. *(Microsof t imagine cup EMEA region top 10 projects)*
• **Abbie (AR/VR Sensor Based roBot for Intuitive Exploration):** Used Google project tango-based area learning and raspberry pi to build an autonomous small scale vehicle. (KPIT Sparkle National top 15 finalist)
• **LVPEI MITRA Engineering the Eye Workshop 2016:** Worked in a team of 6 in developing a project called BullsEye during an MIT Media Lab Workshop in LV Prasad Eye Institute.(Awarded Certificate of team excellence)
• **SRISTI-UNICEF Summer School 2017:** Developed a low-cost toxic gas detector for the prevention of casualties of salt farmers due to toxic gas leakages in Rann Of Kutch region in Gujarat.

Skillset

Python, R, C++, HTML, CSS, JS, SolidWorks, Microcontroller, ARM, SDR programming, Sensor Design

Achievements

- OraSc/Lyfe startup selected for top 10 startups for AIT 2020 Program
- HackZurich 2020 Sponsor Challenge Winner,
- Microsoft Imagine Cup EMEA Top 10 Projects,
- Future Ideas 2015 worldwide competition finalist,
- KPIT Sparkle 2017 National top 15 Finalist
- SRISTI UNICEF 2015 Award Winner,
- National Entrepreneurship Challenge 2015/16 Winner

Interests

Deep Learning, Data Science, Computational Neuroscience, Neurobiology, Human-Computer Interaction, Wearable Sensors, Bioengineering, Particle Physics