

● WORK EXPERIENCE

01/02/2019 – CURRENT – Geneva, Switzerland

STUDENT RESEARCHER – NCCR SYNAPSY, CAMPUS BIOTECH

- Implemented audio classification neural network based on MFCC, chroma, tonnetz and spectrogram features.
- Implemented a simple LSTM RNN on time-series data and different CNN LSTM architectures over complex video datasets to create a non-invasive neurological disorder diagnosis tool.
- Implemented TVL1 algorithm for extraction optical flow data from videos and implemented TSN over video dataset.

(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

OPENLAB SUMMER STUDENT – CERN

- Developed an automated damage analysis python tool for stereo image pair and shuttle radar topography-based digital elevation models and structure point data for Aleppo, Syria.
- Implemented [mechanical turk](#) web instance for refugee camp satellite image polygon data generation. ([Talk](#))
- Implemented event tracker for social media-based disaster data collection tool called [E2MC](#)
- Carried out simulations using Garfield++ to produce gas tables for Argon-Carbon Dioxide gas mixture and determine ionization, excitation rates, gain curves and find transfer probability and penning effect. ([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

SUMMER STUDENT – GENEVA TSINGHUA INITIATIVE

- 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

RESEARCH INTERN – GRAVIKY LABS (MIT MEDIA LABS OFFSHOOT)

- 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

Shreyasvi Natraj, Nada Kojovic, Sharada Prasanna Mohanty, Thomas Maillart, Marie Schaer
March 2021 (In review) - Nature Scientific Reports

● EDUCATION AND TRAINING

01/05/2015 – 30/05/2019 – Bangalore, India
BACHELOR OF ENGINEERING – R.V. College Of Engineering

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

09/09/2019 – 01/03/2022 – Geneva, Switzerland
MASTERS OF SCIENCE – University of Geneva

- **Course:** Neuroscience

● PROJECTS

Projects

- **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](#).
- **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)
- **Casie (Context Acquired detail Sensing in Indoor/outdoor Environment):** Implemented a pseudo-deep-learning model to compare results from multiple machine learning models for emotion analysis using voice and image. (*Microsoft imagine cup EMEA region top 10 projects*)
- **Pam (Purification Actuating Module):** Prototyped a floatation device for stagnant water purification using vacuum pump suction, porous membrane filtering and custom-made gyroscope stabilizer.(Future Ideas 2015 top 15 finalist project)
- **Low cost miniaturized bacteriological culture incubator:** Used microcontroller regulated Peltier heating as well as a thermocol box for making the a [low-cost incubator](#).
- **Hyperspectral Imaging of Teeth:** Generated UV and IR spectrum images of oral cavity by modifying a CMOS camera sensor and Implemented SIFT, SURF and RANSAC algorithms for teeth image alignment. (*CMU HCII, USA remote project under Mayank Goel*)
- **Insect Tracking:** Used [Lime software-defined radio \(SDR\)](#) in order to track insects and their behavior. (*NCBS, Bangalore-India, Project under Sharon Olsson*)

● SKILLSET

Skillset

- Python, R, C++, HTML, CSS, PHP, Javascript
- Deep Learning, Web Development, Data Science, Data Mining, Data Modelling, Data Wrangling

● HONOURS AND AWARDS

Honours and awards

- 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,
- MIT Media Lab-LVPEI Certificate Of Team Excellence
- Airbus Fly your Ideas 2015 Global Top 100 teams
- ShellIdeas 360 2015/16 Stage 2 Qualifiers