

WORK EXPERIENCE

01/02/2019 – CURRENT – Geneva, Switzerland

NATIONAL CENTRE FOR COMPETENCE IN RESEARCH SYNAPSY (PROF. MARIE SCHAEER'S GROUP) – GRADUATE STUDENT RESEARCHER/ RESEARCH ASSISTANT

- Carried out 3D localization and pose estimation using photogrammetry and point cloud analysis.
- Developed gaze, audio & video classification neural network-based screening tools for autism spectrum disorder.
- Contributed to Securing [Swiss National Foundation Sinergia grant](#) for the research group.

(Supervisors: [Marie Schaer](#), [Thomas Maillart](#))

Slurm, Seaborn, PyTorch, Scikit, Keras, TensorFlow, OpenCV, Pandas, R-Caret, Streamlit

01/07/2021 – 30/06/2022 – Geneva, Switzerland

CERN (IT-CD-CLI, FORMERLY IT-DI-EFP) – TECHNICAL STUDENT

- Used terraform & ansible for [EOSC Testsuite](#) for high energy physics, deep learning and high-performance computing workload benchmarking on several Cloud computing providers and developed a web interface for results visualization and analysis.
- Conducted [FAIR](#) testing and developed several kubernetes-based tools for the [Archiver project](#).
- TestSuite awarded [best demo](#) at [EGI Conference 2021](#).
- Archiver Awarded for Collaboration and Cooperation by the [Digital Preservation Coalition](#).

(Supervisors: [Joao Fernandes](#), [Bob Jones](#))

kubernetes, docker, HPC, GCP, Azure, AWS, IBM Cloud, Deep Learning, Data Science, Cloud computing

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 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](#))

Pandas, OpenCV, AWS M-Turk, GCP, HTML, CSS, JS, QGIS, Pybossa, Unsupervised Learning, 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. ([Press Release](#))
- 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

23/07/2021

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

S. Natraj, N. Kojovic, S.P. Mohanty, T. Maillart & M. Schaer, Nature Scientific Reports ([DOI](#))

EDUCATION AND TRAINING

01/05/2015 – 30/05/2019

R.V. COLLEGE OF ENGINEERING – Bachelor of Engineering

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

Field of study Biotechnology

08/09/2019 – 01/08/2022

UNIVERSITY OF GENEVA – Masters of Science

GPA: 5.56/6

Field of study Neuroscience

VOLUNTEERING PROJECTS, ACHIEVEMENTS, SKILLSET & INTERESTS

Selected Projects

- **NeuralWorks:** Working on a startup project called [NeuralWorks](#) based on developing Brain-machine interfaces using [Unicorn Hybrid Black](#), [Brainflow](#) and deep learning.
- **Brain fMRI Data Analysis Platform:** Worked on developing a brain fMRI data analysis platform using [XNAT](#), [DCM4CH](#) and [AWS Cloud](#) during a summer internship at [Fondation Campus Biotech](#) under [Dr. Michael Dayan](#)
- **Abbie (AR/VR Sensor Based roBot for Intuitive Exploration):** Used Google project tango's area learning and raspberry pi to build an [autonomous pod-like vehicle](#). (KPIT Sparkle 2017 National top 15 finalist)
- **Casie (Context Acquired detail Sensing in Indoor/outdoor Environment):** A deep-learning model to compare results from machine learning models for emotion recognition using voice and image. (*Microsoft imagine cup [EMEA region top 10 projects](#)*)
- **COVID Risk Calculator:** Developed a [Personalized COVID Risk Calculator](#) to determine the individual's risk of COVID when carrying out daily activities under [Dr. Christin Glorioso](#).
- **Insect Tracking:** Used [Lime software-defined radio \(SDR\)](#) in order to track insects and their behavior through flight patterns. (*NCBS, Bangalore-India, Project under [Dr. Shannon Olsson](#)*)
- **LVPEI MITRA Engineering the Eye Workshop 2016:** Worked on developing BullsEye, a smartphone attachment to determine corneal topography 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 poisonous gas leakages in [Rann Of Kutch region in Gujarat](#).

Skillset

Python, R, C++, ARM programming, FPGA signal processing, Dry & Wet Lab Skills, SolidWorks, Web Development

Achievements

- Part of [Talentkick](#) 2022 Romandie cohort
- Selected among top 10 startups for Venturelab's [AIT 2020 Program](#),
- [HackZurich 2020](#) Sponsor Challenge Winner,
- Microsoft Imagine Cup 2020 [EMEA Top 10 Projects](#),
- Future Ideas 2015 worldwide competition finalist,
- SRISTI UNICEF 2015 Award Winner,
- [National Entrepreneurship Challenge](#) 2015/16 Winner