Chinmay SAMANT

2, Place Alphonse de Lamartine
67400, Illkirch Graffenstaden - France
+33 (0)6 05 92 92 27
chinmaynsamant@gmail.com
www.linkedin.com/in/csamant/

Summary

- PhD research scientist with a strong backround in computer vision and robotics along with international publications in deterministic machine learning approaches.
- Extensive experience in 3D reconstruction, image processing, autonomous MRI navigation and outlier data removal using OpenCV (C++), TensorFlow and Pandas (Python), Gloptipoly and Optimization Toolbox (Matlab, Maple).
- Self-motivated, autonomous and multilingual individual accustomed to international working environment having an analytical, entrepreneurial mindset.

Key industry skills

Scientific communication	3D-reconstruction	Python, TensorFlow, Pandas
Public speaking	Object Recognition	C/C++, OpenCV, Eigen
Project and time management	International consulting	Matlab, Optimization

Languages: English (fluent), French (B1+), Marathi (native), Hindi, Konkani, Portuguese

Relevant work experience

Freelance consultant for investment banking — Strasbourg, France
ML Engineer — 03/2019 – Present
Profit optimization in automated trading strategies

- **Multivariate logistic regression** based algorithms in Python using Pandas and Numpy libraries
- TensorFlow based ANN algorithm in progress
- Client: SSGAM, California, USA

Siemens-Heathineers — Strasbourg, France
Engineer — 11/2015 – 10/2018
Ultrasound Probe Calibration and Positioning

- **Convex Optimization** approach to outlier removal in sensor/camera data
- Prototype ultrasound probe integration into an on-site ultrasound machine
- Interaction with surgeons in live-surgery for their feedbacks

ICUBE-CNRS, University of Strasbourg — Strasbourg, France
Research Engineer — 08/2015 – 10/2015
Detection and visual tracking of a marker in MR images

- **Model predictive approach** based on novel shape metric for detection and tracking marker
- Fully automatic feature based classification and visual tracking
- Implementation in C++ using OpenCV and Eigen libraries

LE2i-CNRS, University of Bourgogne-FrancheComté — Le Creusot, France
Intern — 06/2014 – 08/2014
Wood pattern analysis and classification using machine learning

- Age and quality determination of wooden planks using machine learning
- Comparative study of multiple classifiers such as **SVM, K-means, Random Forest** etc.

Education

PhD in Robotics/Computer Vision Strasbourg, France
University of Strasbourg 11/2015 – 12/2019
Ultrasound laparoscopic guidance for minimally invasive surgery, biopsy, and ablation procedures

- Hand-Eye Calibration based on **semi-definite programming optimization**
- Indoor positioning of medical instrument using IMU-camera sensors
- Determinisitc AI approach for outlier estimation and removal
- CIFRE scholarship for industrial PhD with Siemens-Healthineers
- A+ level international conference publication at IROS 1029 (Macau, China), among others

Masters in Computer Vision Le Creusot, France
University of Bourgogne-FracheComté 09/2013 – 08/2015
(Erasmus Mundus Vision and Robotics Program)

- Machine Learning, ANN, Autonomous, Probabilistic Robotics, Localization, Visual Servoing
- Image Processing, 2D/3D Computer Vision, Scene Segmentation and Registration, Visual Tracking, Medical Imaging

Relevant Projects:

- **Projective 3D-reconstruction** using projector patterns (Kinect-alike)
- **Face detection** using Eigen image-based machine learning
- **Structure-from-Motion** based mobile robotics project in **ROS**

Masters in Electronic Science Pune, India
Univercity of Pune 08/2010 – 04/2012

- Embedded systems design, Digital Signal Processing
- Analog and power electronics design, Mechatronics
- First prize for master's thesis

Bachelors in Electronic Science Pune, India
University of Pune 07/2007 – 04/2010

- Mathematics Physics, Statistics

Publications

1. Robust Hand-Eye Calibration via iteratively re-weighted rank-constrained semi-definite programming, in IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2019, Macau, China
2. Robust laparoscope body calibration using Hand-Eye Calibration methods, in 9th CRAS and 30th SPIGC unite at a joint conference 2019, Genoa, Italy
3. Poster on Hand-Eye calibration for surgeries using ultrasound laparoscope, in Congrès National d'Imagerie du Vivant - CNIV 2019, Paris, France
4. Fluid density measurement with ultrasound sensor, Raman memorial conference (RMC), 2013, Pune, India

Affiliations and hobbies

Permit de conduire B, Music (Guitar, Singing), Sports (Badminton, bicycling), RC airplane builds