RAFAEL HENRIQUE TIBÃES

+55 41 98844 8118 | //fael.nl | r@fael.nl

Software Developer with experience in biometrics, machine learning, computer vision and high-performance computing. Graduated in Computer Science and now pursuing a master's degree with focus on biometrics.

CODING EXPERIENCE

2015 – present
Computer Vision Developer at Akiyama - www.akiyama.com.br

Project:
Newborns recognition using fingerprints (current)
Description:
Development of a solution for automatic fingerprint recognition of newborns. This project aims to avoid child swapping or kidnapping in maternities, airports, etc. by linking the mother's and the child's biometrics together.
Responsibilities:
- Development of tools to acquire fingerprints images of mothers and babies; including biometric database management and scripts to perform algorithms evaluations.
- Research of algorithms related to fingerprint matching and identification under robust deformations caused by the aging. In partnership with the Federal University of Bahia (UFBA, Brazil), some of these algorithms will be published as academic research to achieve the master's degree.
Techs:
C/C++, OpenCV, CMake, CUDA, Julia, Qt, Docker, Machine Learning, Cameras.

Project:
JuliaBiometrics (current) – Open Source under https://github.com/JuliaBiometrics
Description:
As a consequence of the above project, this one focus on biometrics database manipulation. It describes biometrics operations in a higher level, independent from the biometric modality. The key idea is to provide a set of useful scripts for biometrics research.
Responsibilities:
Development of the scripts and integration with the Newborns recognition's project.
Techs:
Julia, MongoDB, Docker

Project:

ICAO Compliance

Description:

Development of a solution for biometric enrollment, specifically for frontal faces. The solution is composed by a set of algorithms that analyses the face, eyes and mouth landmarks, computing a score for the overall photo quality accordingly ISO. It also crops the face in the adequate proportion and removes background using 3D information when available.

Responsibilities:
- Development of algorithms for quality analysis, crop and segmentation;
- Integration with some third-parties SDKs for algorithms and sensor communication.

Techs:

C/C++, OpenCV, CMake, Docker, Machine Learning, Canon, Intel RealSense

2008 – 2015

Academic Researcher at IMAGO - www.imago.ufpr.br

Project:

Object Tracking & Motion Analysis

Description:

Research on video problems, such as motion analysis, tracking, action recognition, optical flow and scene understanding.

Responsibilities:

Development and benchmarking of a couple of algorithms from the literature.

Techs:

C/C++, Wolfram Mathematica, OpenCV, Make, Machine Learning, Axis PTZ Cameras

Project:

3D Face Detection

Description:

Research on 3D face detection and recognition using low cost 3D cameras.

Responsibilities:

Development of a high-performance face detector using parallel programming on GPUs, based on a face detection algorithm from the literature.

Techs:

C/C++, OpenCV, OpenCL, CUDA, Make, Microsoft Kinect

EDUCATION

Federal University of Bahia (UFBA, Brazil): ***Master's in computer science*** (2016 – ongoing)

Federal University of Paraná (UFPR, Brazil): **Bachelor's in computer science** (2008-2012)

Udacity Nanodegree: **Machine Learning Engineer** (2017-2018)

Languages: **Portuguese**, **English** (full business proficiency, B2), **German** (basic user, A1).

AWARDS

Best Computer Science work at UFPR undergraduate research event in the years 2009, 2011 and 2012.

11th place in the ACM International Collegiate Programming Contest, South America, 2012

67th place (out of 1515 teams) in the IEEEXtreme Programming Competition 5.0, 2011.