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Summary

Specializes in computer vision, machine learning and data analysis techniques. Has extensive background in software engineering.

Current research interests: Head pose estimation, tracking, higher level activity recognition such as facial expressions, heart rate recognition from video, with particular emphasis on facial analysis in unconstrained realistic scenarios.

Technical skills: C++, Python, C#, Qt, Boost, CMake, Shell
Scientific computing: OpenCV, PointCloudLibrary(PCL), scientific python stack, Matlab

Education

Oct 2012 – Sept 2016 (Expected)	University of Trento (Trento, Italy) **PhD in Computer Science** Thesis: Unconstrained 2D and 3D face analysis
Sept 2009 – July 2010	Belarusian State University of Informatics and Radioelectronics (Minsk, Belarus) **Master in Computer Science** Thesis: Automated face recognition system. **Final grade: 9 out of 10**
Sept 2004 – July 2009	Belarusian State University of Informatics and Radioelectronics (Minsk, Belarus) **Bachelor in Computer Science** Thesis: Automated workplace of the head of the border control department **Diploma with distinction. GPA 8.9. Final grade: 10 out of 10**

Scientific Projects

Carried out research activities, real-time architecture design and scientific programming for several projects:

- **ACANTO**. The ACANTO project aims at increasing the number of older adults who engage in a regular and sustained physical activity. Works on designing heart rate analysis from video, stress and fatigue and facial action units analysis.
- **DALi - Devices for Assisted Living**. The project aimed at extending autonomous live of elderly people beyond home. Designed and developed a real-time face analysis technology capable of estimating head pose and facial expressions of the user.
- **PerTe - Persuasive Technology**. The purpose of the project is to aid a group of people in a brainstorming environment. Designed and developed a user monitoring module, predicting person's gaze, speech activity, attention given/received.

Personal Projects

Has started and actively contributes to several personal projects:

- **FaceCept - Face perCept**. FaceCept technology is a set of components that allows real-time analysis of people's faces. It includes gender, age, facial expression, new/returning and attention time recognition. The technology is cross-platform: it works even in a browser. The project **took the first place** in ITJUMP 2012.
- **FaceCept3D** is a flexible **open-source** technology for 3D face analysis and recognition, available on GitHub. It allows for head pose estimation and facial expression recognition from extreme head poses. Key advantages of the technology include: flexible architecture that decouples scientific algorithms from technical components and real-time processing pipeline.

Enterprise Experience

July 2010 – Sept 2012

Senior software engineer, project lead at HiQo Solutions, Inc (Minsk, Belarus)

Carried out technical analysis, team management, programming and scientific programming in various projects:

- **Intellectual Property Violation Detection Tool**. The project aimed at automating the process of detecting images copyrighted as EuroCities AG maps. Designed and developed a new approach for detection of the copyrighted images.
  C++, OpenCV, Matlab
- **CaseMate Internal Production Management System** The project was aimed at creating a web management system for all the stages of smartphones cases production.
  ASP.NET MVC, C#, JQuery
- **David Systems MultiTrack**. MultiTrack is powerful multichannel audio editor, that allows the user to drag and drop audio templates to the timeline, play them according to their position, settings and various audio filters applied.
  C++, Stl, Boost, MFC

June 2006 – June 2010

Software engineer at Todes, Ltd. (Minsk, Belarus)
Worked at numerous projects related to Belarusian Border Control System:

- **Belarusian Border Control System**. A set of projects aimed at improving workflow of border control operators. Developed several automated workplaces.
  Delphi, Oracle Database
- **Computer Face Recognition System**. Developed a face verification system for Machine Readable Travel Documents.
  C++, Qt, OpenCV, Matlab
- **Analysis and Forecasting for Belarusian Border Control System**. Developed a cross-platform neural-network forecasting engine to predict daily passenger flow through a checkpoint based on statistical data.
  Java, Oracle Database

Scholarships and Awards

- PhD Scholarship, The University of Trento, Nov 2012 – Present
- Winner of ITJUMP 2012 with a project FaceCept

Publications

[1] S. Tulyakov and N. Sebe. **Regressing a 3D Face Shape from a Single Image**. To appear in *International Conference on Computer Vision*, 2015.

[2] R. L. Vieriu, S. Tulyakov, E. Sangineto, S. Semeniuta, and N. Sebe. **Facial Expression Recognition under a Wide Range of Head Poses**. In *Face and Gesture Recognition*, 2015.

[3] S. Tulyakov, R. L. Vieriu, S. Semeniuta, and N. Sebe. **Robust Real-Time Extreme Head Pose Estimation**. In *Internation Conference on Pattern Recognition*, 2014.

References (available upon request)