Luca Ferranti

Curriculum Vitae

February 24, 2021

My mission in life is not merely to survive, but to thrive; and to do so with some passion, some compassion, some humor, and some style. - Maya Angelou

PERSONAL DETAILS

Name	Luca Ferranti
Birthdate	May 3, 1996
Citizenship	Italian
Phone	+358 41 809 52 58
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EDUCATION

Phd Computer Science 2020-Present

University of Vaasa, Vaasa, Finland

Research on computational methods for positioning and visual localization. Particularly, focus on computational algebraic geometry techniques to develop stable and efficient optimized polynomial solvers.

Teaching a graduate level course in computer vision.

M.Sc Electrical Engineering 2018-2019

Tampere University of Technology, Tampere, Finland

Graduated on 18.12.2019 with distinction, GPA: 4.89/5.0

Major Subject: Signal Processing and Machine Learning (GPA: 5.0/5.0)

Minor Subject: Wireless Communications (GPA: 5.0/5.0)

Thesis Topic: *Confidence Estimation in Image-Based Localization*, grade: 5/5

B.Sc Electrical Engineering 2015-2018

Tampere University of Technology, Tampere, Finland

Graduated on 25.05.2018 with distinction, GPA: 4.82/5

Major Subject: Electronics (GPA: 4.84/5.0)

Minor Subject: Physics (GPA 5.0/5.0)

Thesis Topic: *Continued fractions in modelling of passive circuit components and transmission lines* (written in Finnish), grade: 4/5

WORKING EXPERIENCE

Project Researcher Jan 2020-Present

University of Vaasa, Vaasa, Finland

Research on computational methods for positioning and visual localization. Particularly, focus on computational algebraic geometry techniques to develop stable and efficient optimized polynomial solvers.

Teaching a graduate level course in computer vision.

Visiting Researcher Jan 2020-Present

Aalto University, Espoo, Finland

For my doctoral research, I am also affiliated with Aalto University.

Visiting Researcher March 2020-April 2020

Lund University, Lund, Sweden

Visiting researcher in the department of mathematics in Lund University. I worked on numerical methods for sensor networks self-calibration.

Master Thesis Worker June 2019-December 2019

Aalto University, Espoo, Finland

In my thesis I investigated state-of-the-art pose estimation algorithms, with focus on indoor localization, and proposed novel approaches to improve algorithms robustness.

Research assistant Nov 2018- Dec 2019

Tampere University of Technology

Visiting master thesis worker at Aalto university from June 2019.

GPU programming for image denoising with openCL till May 2019.

Research assistant May 2017- Dec 2018

Tampere University of Technology, Tampere, Finland

Teaching: TA in basic courses in electrical engineering (Circuit Analysis and Linear Systems). I also developed automatically graded exercises on the moodle platform and Matlab demos to enhance students learning. My teaching methods received high praise from students feedback.

Research: Numerical methods for heat transfer problems in superconducting cables.

Employee October 2015- April 2017

McDonald's, Tampere, Finland

By my colleagues' initiative, I was chosen employee of the month in April 2016 and "day saver 2016" in summer 2016.

Italian Teacher Aug 2015 - Sep 2015

Tampere Classical High School, Tampere, Finland

I taught a short introductory Italian course in Tampere Classical High School. I designed the lessons and prepared the materials myself.

Italian Teacher Sep 2014 - Apr 2015

Onlus Terzavia, Ancona, Italy

As volunteer, I taught Italian to immigrants targetting levels from A1 to B2. In addition to contact teaching, I designed the lessons and prepared materials myself

LANGUAGE SKILLS

Italian:	Native proficiency
Finnish:	Full professional proficiency (C2)
English:	Full professional proficiency (C1)
French:	Limited working proficiency (B1)
German:	Elementary proficiency (A2)

IT SKILLS

Languages:	Julia, Matlab, Python, C, C++ (fluent). Javascript, HTML, CSS, SQL (good)
Computer Algebra:	Maple, Sage, Macaulay2, Mathematica
Tools:	Git, Docker
Operating Systems:	Linux, Windows, MacOS
Reporting:	LaTeX, Microsoft Office, Open Office

RESEARCH OUTPUTS

Conference papers:

- L.Ferranti, K.Åström, M.Oskarsson, J.Boutellier, J.Kannala, *Sensor Network TDOA Self-Calibration: 2D Complexity Analysis and Solutions*, **accepted** to ICASSP2021, preprint: arXiv:2005.10298
- L.Ferranti, X.Li, J.Boutellier, J.Kannala, *Can You Trust Your Pose? Confidence Estimation in Visual Localization*, International Conference of Pattern Recognition (ICPR) 2020, to appear
- L.Ferranti, J.Boutellier, *Towards Algebraic Modeling of GPU Memory Access for Bank Conflict Mitigation*, 2019 IEEE International Workshop on Signal Processing Systems (SiPS)

Talks:

- *Confidence estimation in image-based localization*, AI day, 26 November 2020
- *Confidence estimation in image-based localization*, 2019 Indoor and Challenging Navigation (INTO) Seminar, 29 November 2019

OTHER ACADEMIC MERITS

I have peer-reviewed articles for the following conferences:

- International Conference on Acoustics, Speech and Signal Processing (ICASSP)
- International Workshop on Signal Processing Systems (SiPS)