

Onur Ferhat

COMPUTER SCIENTIST · ENGINEER

Computer Vision Center, Edificio O, Campus UAB 08193 Barcelona SPAIN

☎ (+34) 633 032 866 | ✉ oferhat@cvc.uab.es | 🌐 onurferhat.com | 📱 tiendan | 📺 onurferhat

Education

Autonomous University of Barcelona

Barcelona, Spain

PHD IN COMPUTER VISION

2011–(2016)

- Supervised by: Dr. Fernando Vilariño.
- Working on **natural light (webcam-based) eye tracking algorithms**.
- Making the tracker more accurate, robust and easier to use.
- Collaborating with Dan Norton for **interdisciplinary projects**.
- Using computer vision and eye tracking to create artistic user interactions.
- Presented joint project Memory Fields in **Sonar +D 2015** and The Volpelleres Living Lab.

Autonomous University of Barcelona

Barcelona, Spain

MSC IN COMPUTER VISION AND ARTIFICIAL INTELLIGENCE

2011–2012

- Courses on many areas of computer vision.
- Hands-on experience in fields including **image processing**, **machine learning** and **artificial intelligence**.
- Final project on natural light eye trackers.

Bogazici University

Istanbul, Turkey

BSC IN COMPUTER ENGINEERING

2004–2009

- One of the top computer engineering degrees (top **0.03 percentile** in university entrance exams).
- Courses on **robotics**, **artificial intelligence** (MSc level), **pattern recognition** (MSc level) in the senior year.
- Final project on **reinforcement learning** for Aibo robots (simulation environment).
- Also studied: biomedical engineering, Spanish (3 years), linguistics, advanced English, environmental science.

Honors & Scholarships

HONORS

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|------|--|------------------------------------|
| 2014 | Google Research Award , Awarded to my supervisor Dr. Fernando Vilariño for his proposal titled “Linking physical documents with digital information”. | Autonomous University of Barcelona |
| 2009 | Honors Degree , Graduated with a GPA of 3.49 and awarded an honors degree. | Bogazici University |
| 2004 | Nationwide Success , 141st among ~1.5 million students. | University Entrance Exams (OSS) |
| 2001 | Nationwide Success , 5th among ~600 thousand students. | High School Entrance Exams (LGS) |

SCHOLARSHIPS

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|-----------|---|------------------------------------|
| 2011 | Postgraduate Scholarship , For 4 years, including tuition for master’s degree. | Autonomous University of Barcelona |
| 1999–2009 | General Scholarship , Continuous TEV scholarship for 10 years. | Turkish Education Foundation (TEV) |

Experience

Banksoft - Payment Systems Solutions

Istanbul, Turkey

SOFTWARE DEVELOPER

2009–2011

- Worked on personalization (preparation for customers) of **EMV-compliant chip cards** for major Turkish and international banks.
- Completed training on programming **embedded applications** for EMV chip cards.
- Actively participated in the project revolutionizing the company’s legacy systems.
- *Defined tasks:*
 - Managing customer data and **security data**.
 - Preparing TLV-format (tag-length-value) file outputs for **mass-embossing of cards**.
 - Reflecting the required changes for new card products (changed chips, new campaigns, etc.) to the code.
 - Installing updated components on production servers of banks.
- *Additional accomplishments:*
 - Developed a program for internal use of colleagues while development.
 - Developed an editor for parsing TLV format personalization files. Implemented functionalities for **editing**, **automated verification** of security data, parsing of special tag values, robust error detection, etc.

Inveon

SOFTWARE DEVELOPER

Istanbul, Turkey

2008–2009

- Worked on **C#** web projects for internal use of many large Turkish companies.
- Projects for a **variety of sectors** (pharmaceutics, insurance, security, etc.).
- Learned latest web technologies (jQuery, AJAX, etc.) and practiced **agile development** methodology.

Nuna Localization

FREELANCE TRANSLATOR

Istanbul, Turkey

2007–2009

- Participated in translation of **Adobe Flash** user manual, **Windows 7** user manual and Turkish web page, and other Microsoft products.

Teaching Experience

2014–2015 **Multimedia Systems**

Autonomous University of Barcelona

2014–2015 **Robotics, Language and Planning**

Autonomous University of Barcelona

2011–2012 **Programming Laboratory**

Autonomous University of Barcelona

Open Source Contributions

Opengazer: My fork of this project on GitHub (github.com/tiendan/OpenGazer) remains the most actively developed branch. We revamped the code by removing dependencies to legacy libraries, switching to Qt for GUI and modularizing the eye tracker components.

Skills & Workshops

Programming Python, C/C++/C#, Matlab, SQL

Web Django, JavaScript, Bootstrap, HTML, CSS, Backbone.js, jQuery, AngularJS

Languages Turkish, English, Spanish, Catalan

Hands-on Deep Learning course (January 2016)

Barcelona

- Ongoing internal workshop on deep learning with MatConvNet toolbox (in Computer Vision Center).

Auracle Project (June 2014)

Bilbao

- Participated in the Auracle project for the eNTERFACE'14 workshop in Bilbao.

Publications

JOURNAL ARTICLES

Onur Ferhat, Fernando Vilariño (2016). **Low Cost Eye Tracking: Methods and General Applications**. Journal of Computational Intelligence and Neuroscience. (under review)

Onur Ferhat, Fernando Vilariño, F. Javier Sanchez. (2014). **A Cheap Portable Eye-Tracker Solution for Common Setups**. Journal of Eye Movement Research, 7(3), 1–10.

CONFERENCE PROCEEDINGS

Onur Ferhat, Arcadi Llanza, Fernando Vilariño. (2015). **Gaze Interaction for Multi-Display Systems using Natural Light Eye-Tracker**. In 2nd International Workshop on Solutions for Automatic Gaze Data Analysis.

Dan Norton, Fernando Vilariño, **Onur Ferhat**. (2015). **Creative Engagement in Digital Collections**. In Internet Librarian International.

Dan Norton, Fernando Vilariño, **Onur Ferhat**. (2015). **Memory Fields: DJs in the Library**. In 21st International Symposium on Electronic Art (accepted).

Onur Ferhat, Arcadi Llanza, Fernando Vilariño. (2015). **A Feature-Based Gaze Estimation Algorithm for Natural Light Scenarios**. In 7th Iberian Conference on Pattern Recognition and Image Analysis (Vol. 9117, pp. 569–576). Springer International Publishing.

Onur Ferhat, Fernando Vilariño. (2013). **A Cheap Portable Eye-Tracker Solution for Common Setups**. In 17th European Conference on Eye Movements.

MASTER'S THESIS

Onur Ferhat. (2012). **Eye-Tracking with Webcam-Based Setups: Implementation of a Real-Time System and an Analysis of Factors Affecting Performance**. (Fernando Vilariño, Ed.) (Vol. 172).