

Zuria BAUER

Experience

- Sept 2020 - **Research Stay at the Computer Vision and Geometry Group (CVG), ETH Zürich.**
Dec 2020 Monocular Depth Prediction using Novel View Synthesis for refinement. **Advisor:** Prof. Dr. Martin R. Oswald and Prof. Dr. Marc Pollefeys. **Virtual Collaboration:** January to October 2021. **Publication:** "NVS-MonoDepth: Improving Monocular Depth Prediction with Novel View Synthesis at International Conference on 3D Vision (3DV) 2021."
- May 2018 - **Research Assistant, University of Alicante.**
May 2019 Working on the field of monocular depth prediction using deep learning algorithms. **Advisor:** Prof. Dr. Miguel Cazorla.
- July 2015 - **Internship at BASF Coating GmbH, Münster, Germany.**
Sept 2015 Working at the Automotive OEM Coatings Solutions Europe group, in the field of "Process Technology Application". **Advisor:** Dr. Daniel Briesenick.
- Feb 2014 - **Research intern, University of Alicante.**
June 2014 Usage of a Photoreaction for Degradation of Phenol in Wastewater. **Advisor:** Prof. Dr. Andrés Fullana.
Feb 2015 **Teaching Assistant at CACHEM, University of Alicante,** Python for Scientists and Engineers workshop.

Selected Publications

- December 2021 **International Conference, International Conference on 3D Vision (3DV).**
Zuria Bauer and Zuoyue Li and Sergio Orts-Escalano and Miguel Cazorla and Marc Pollefeys and Martin R. Oswald, "NVS-MonoDepth: Improving Monocular Depth Prediction with Novel View Synthesis". PDF File [📄](#)
- September 2020 **Journal, Pattern Recognition Letters.**
Zuria Bauer and Alejandro Dominguez and Edmanuel Cruz and Francisco Gomez-Donoso and Sergio Orts-Escalano and Miguel Cazorla, "Enhancing Perception for the Visually Impaired with Deep Learning Techniques and Low-cost Wearable Sensors". PDF File [📄](#)
- December 2019 **Journal, IEEE Access.**
Zuria Bauer and Felix Escalona and Edmanuel Cruz and Miguel Cazorla and Francisco Gomez-Donoso, "Refining the Fusion of Pepper Robot and Estimated Depth Maps Method for Improved 3D Perception". PDF File [📄](#)
- August 2019 **Journal, Scientific Data - Nature.**
Zuria Bauer and Francisco Gomez-Donoso and Edmanuel Cruz and Sergio Orts-Escalano and Miguel Cazorla, "UASOL: A Large-scale High-resolution Stereo Dataset". PDF File [📄](#)
- November 2018 **International Conference, International Workshop of Physical Agents (WAF).**
Zuria Bauer and Felix Escalona and Edmanuel Cruz and Miguel Cazorla and Francisco Gomez-Donoso, "Improving 3D estimation for the Pepper robot using monocular depth prediction". PDF File [📄](#)

Education

- 2017–2021 **PhD. Department of Computer Science and Artificial Intelligence, University of Alicante.**
Doctoral degree in Advanced Computing where topics related to the existing lines of research, such as **Artificial Vision**, Parallel Computing and Robotics are addressed. **Advisors:** Prof. Dr. Miguel Cazorla & Dr. Sergio Orts-Escalano
Thesis Defense: 16 September 2021.
- 2016–2017 **M.Sc. Automation and Robotics, University of Alicante.**
The degree provides an introduction to Automation and Robotics Research, as well as other related fields, such as: Artificial vision, Robot control and programming, etc. **Master End-Project Advisor:** Prof. Dr. Fernando Torres
- 2010–2016 **Bachelor in Chemical Engineering, University of Alicante.**
Intensive undergraduate program in Chemical Engineering and Science with an European Accreditation of Engineering Programs (EUR-ACE) certificate from the ENAEE-ANECA. **Bachelor End-Project Advisor:** Prof. Dr. Andrés Fullana

Projects

- PhD Thesis, Monocular Depth Estimation: Datasets, Methods, and Applications,** Defense: 16 September 2021, **Advisors:** Prof. Dr. Miguel Cazorla & Dr. Sergio Orts-Escalano, PDF File [📄](#).
- Master End-Project, Road and Obstacle detection for terrestrial autonomous vehicles using Go-Pro cameras,** **Advisor:** Prof. Dr. Fernando Torres Medina, PDF File [📄](#).
- Bachelor End-Project, Design of a Photoreactor for degradation of Phenol in wastewater,** **Advisor:** Prof. Dr. Andrés Fullana, PDF File [📄](#).
- CACHEM Learn** 🔄, *Chemical and Process Engineering Interactive Simulations.*
- Mathematical Optimization** 🔄, *Programming examples solved with Pyomo (Python).*
- Lightning Talks** 🔄, *"Using Octave and Telegram on the mobile phone" and "Object oriented programming with Python".*

Other Publications

- November 2018 **International Conference**, *International Workshop of Physical Agents (WAF)*.
Edmanuel Cruz and **Zuria Bauer** and José Carlos Rangel and Miguel Cazorla and Francisco Gomez-Donoso, "**Semantic localization of a robot in a real home**". [PDF File](#)
- July 2018 **International Conference**, *International joint conference on neural networks (IJCNN)*, Categorie: Core A.
Edmanuel Cruz and José Carlos Rangel and Francisco Gomez-Donoso and **Zuria Bauer** and Miguel Cazorla, "**Finding the place: how to train and use convolutional neural networks for a dynamically learning robot**". [PDF File](#)
- December 2018 **Journal**, *Hindawi - Computational Intelligence and Neuroscience*.
Edmanuel Cruz and Félix Escalona and **Zuria Bauer** and Miguel Cazorla and José García-Rodríguez and Ester Martínez-Martin and José Carlos Rangel and Francisco Gomez-Donoso, "**Geoffrey: An Automated Schedule System on a Social Robot for the Intellectually Challenged**". [PDF File](#)
- February 2019 **Journal**, *Pattern Recognition Letters*.
Jose Garcia-Rodríguez and Francisco Gomez-Donoso and ... and **Zuria Bauer**, et al, "**COMBAHO: A deep learning system for integrating brain injury patients in society**". – *Project Paper* – [PDF File](#)

Research Projects

- 2017 –2019 **National Project**, **COMBAHO: Come back home. System to improve the autonomy of individuals suffering from acquired brain damage in their integration into society / RETOGAR: Retorno al hogar. Sistema de mejora de la autonomía de personas con daño cerebral adquirido y dependientes en su integración en la sociedad**, **Founded:** Spanish Ministry of Economy and Competitivity, **Principal Researchers:** Prof. Dr. Jose García-Rodríguez & Prof. Dr. Miguel Cazorla.
- 2020 –2023 **National Project**, **A2HUMPA: Analysis and learning of human behaviours for monitoring, personalised assistance and early detection of medical conditions / A2HUMPA: Aprendizaje y análisis de comportamientos humanos para monitorización, asistencia personalizada y detección temprana de dolencias**, **Founded:** Spanish Ministry of Economy and Competitivity, **Principal Researchers:** Prof. Dr. Miguel Cazorla & Prof. Dr. Jose García-Rodríguez.

Events

- 2019 **Co-Organizer of the PyConES**, *Alicante*, PyConES is one of the biggest conferences of the Python community in Spain. It was held for the seventh time from the 04th to the 06th of October 2019.
- 2019 **Organizer of the Django Girls Workshop**, *Alicante*, Django Girls is a non-profit organization and a community that empowers and helps women to organize free, one-day programming workshops by providing tools, resources and support.
- 2018 **Speaker at PyConES**, *Malaga*, "From RGB images to depth maps through deep convolutional networks".
- 2018 **Poster Session at PUMPS+AI Summer School**, *Barcelona*, "UASOL: A Large-scale High-resolution Stereo Dataset to Benchmark Depth Estimation from Monocular Videos".
Authors: Zuria Bauer and Sergio Orts-Escolano and Miguel Cazorla.
- 2016 **Speaker at PyConES**, *Almería*, "How to improve your diet and save money with Python" ►►.
- 2016 **Workshop Assistant at PyConES**, *Almería*, "Introduction to Python for beginners (Software Carpentry)".
- 2016 **Speaker at EuroPython**, *Bilbao*, "How to improve your diet and save money with Python" ►►.
- 2014 **Speaker at PyconES**, *Zaragoza*, "Scientific Python".

Languages

English
German
Spanish

Full professional proficiency
Full professional proficiency
Full professional proficiency

Memberships / Reviewing Activities

- Jul 2017 – Ongoing **AERFAI**, *Spanish Association of Shape Recognition and Image Analysis / Asociación Española de Reconocimiento de Formas y Análisis de Imágenes*.
- Oct 2014 – Ongoing **CACheME**, *Non-profit association of chemical engineers (professionals, teachers and students) that aims to stimulate the possibilities of software in process engineering and industrial organisation / Asociación sin ánimo de lucro formada por ingenieros químicos (profesionales, docentes y estudiantes) que pretende estimular las posibilidades de software en la ingeniería de procesos y organización industrial*.
- 2015 – Ongoing **Review Activities**, *IJCNN (2018 – 2022), Computational Intelligence and Neuroscience – HINDAWI (2021), IEEE Access (2020), PyConES (2015 – 2021)*.

Certificates

- 2018 **PyTorch Scholarship Challenge Nanodegree Program**, Udacity, Nanodegree Program.
- 2018 **Self-Driving Car Engineer Nanodegree - Part 1**, Udacity, Nanodegree Program.
- 2018 **PUMPS+AI Summer School**, Organized by: Barcelona Supercomputing Center, University of Illinois, Universitat Politècnica de Catalunya, HiPEAC and is part of 2018 PRACE Advanced Training Centre program, Summer School.
- 2017 **Machine Learning**, Coursera, Stanford University - Andrew Ng.
- 2017 **AERFAI Deep Learning Summer School**, University of Alicante.
- 2017 **EPS Workshop**, Scientific vision and applications for computers about graphical processors JGPU, University of Alicante.
- 2016 **CACHEM Workshop**, Optimization workshop (mathematical programming) with iPython y Pyomo, University of Alicante.
- 2016 **Honor Code Certificate**, Introduction to Linux organized by "The Linux Foundation", Edx.
- 2016 **Honor Code Certificate**, Introduction to Computer Science and Programming using Python by the MITx, Edx.
- 2014 **Aurova Workshop**, Build Your Own Robot Workshop, University of Alicante.
- 2014 **CACHEM Workshop**, Python for Scientists and Engineers, University of Alicante.
- 2014 **CACHEM Workshop**, Matlab y Octave for Scientists and Engineers, University of Alicante.

Computer skills

Python

TensorFlow

Keras

L^AT_EX

MATLAB

Linux

Aspen Hysys

Autocad

Chemcad