

Rodolfo Valiente

- CONTACT *Homepage:* <http://valiente.today>, *Email:* rvalienter90@knights.ucf.edu
- INTERESTS **Autonomous Driving | Deep/Machine Learning | Reinforcement Learning | Computer Vision**
- EDUCATION
- **Ph.D. Computer Engineering, University of Central Florida** (2018-present)
 - Advisor: Dr. Yaser P. Fallah
 - Research: Connected and Autonomous Vehicles | Deep Learning | Reinforcement Learning
 - **M.Sc. Computer Engineering, University of Sao Paulo** (2015-2017)
 - Research: Computer Vision, Image Processing
 - Thesis: Automatic text recognition process in generic identification documents
 - **B.Sc. Electrical Engineering, Technological University Jose Antonio Echeverria (2009-2014)**
 - Honors College Graduate, Summa Cum Laude
 - Thesis: Design of a portable electronic nose based on MOS sensors
- WORK EXPERIENCE
- **Connected & Autonomous Vehicle Research Lab, Research Assistant** (2018-present)
 - Contributed to projects supported by Hyundai, Toyota, Ford, and NSF
 - Lead a group of graduate students on a project for Hyundai-Kia Company to develop a new architecture for CAVs safety applications, as result we increased robustness to communication failure (patent filed).
 - **HRL Laboratories, Autonomous Driving Researcher Intern** (2020)
 - Research in Computer Vision, particularly 3D object detection based on Lidar and images. I tested, trained, and tuned different architectures in different datasets and improved their autonomous vehicle pipeline for object detection (patent filed).
 - **Laboratory of Architecture and Computer Networks, Software Engineer** (2017-2018)
 - Backend developer, Computer Vision, Face and Text Recognition
 - Developed a automated system (server-side solution) for extracting information from identification documents, that led to accuracy improvements and scientific publications.
 - **Laboratory of Architecture and Computer Networks, Research Assistant** (2015-2017)
 - I developed an automatic text recognition system for generic identification documents.
- SKILLS
- **Software:** Python (+TensorFlow, Keras, Torch, OpenCV, OpenAI Gym), C/C++ (+TensorRT), MATLAB (+Simulink), Git, ROS, SUMO Simulator, Java, Docker, Agile Software Development.
 - **Technical Skills:** Autonomous Vehicles, Electronic Hardware, Digital Image and Signal Processing, Computer vision, Machine Learning. Strong hands-on skills in product design, prototyping and test engineering.
- HONORS AND AWARDS
- **Diversity in Vehicular Technology Society NSF Grant** (2019)
 - **University of Central Florida Presentation Fellowship** (2019)
 - **CNPq Fellowship, University of Sao Paulo** (2015)
 - **Inducted into the Honor Group, Technological University Jose Antonio Echeverria** (2014)
 - **Best Work Award from the Electronic and Computer Commission, IMRE** (2014)
 - **Best paper award in 29th Scientific Student Conference of Electronics** (2014)
 - **Bronze medal in the National Biology Contest** (2007)
 - **Silver medal in the Regional Mathematics Contest** (2006)

SELECTED
PUBLICATIONS

-
- "A Maneuver-based Urban Driving Dataset and Model for Cooperative Vehicle Applications", *IEEE CAVS 2020*, Victoria, B.C., Canada
- "Dynamic Object Map based architecture for robust CAV applications", *SAE WCX 2020*
- "Connected and Autonomous Vehicles in the Deep Learning Era: A Case Study on Computer-Guided Steering", *Book Chapter PRCV handbook 2020*
- "Representing Realistic Human Driver Behaviors using a Finite Size Gaussian Process Kernel Bank", *IEEE VNC 2019*
- "Real-Time Hardware-In-the-Loop Emulation Framework for DSRC-based Connected Vehicle Applications", *IEEE CAVS 2019*
- "Controlling Steering Angle for Cooperative Self-driving Vehicles utilizing CNN and LSTM-based Deep Networks", *IEEE IV 2019*
- "Text Recognition in Images, ISBN 978-620-2-19079-4", *Book 2018*
- "Automatic Text Recognition in Web Images", *ACM WebMedia 2017*
- "Mechanism for Structuring the Data from a Generic Identity Document Image using Semantic Analysis", *ACM WebMedia 2017*
- "Improvement of response time by running games on a Cloud Gaming system with layer catcher and movement prediction", *ACM WebMedia 2017*
- "A process for text recognition of generic identification documents over cloud computing", *IPCV 2016*
- "Application of an Electronic Nose Coupled to a Gas Analyzer for Measuring Ammonia", *Chemical Engineering Transactions 2016*
- "Development an Electronic Nose to Identify and Classify Odors from Beverages", *Chemical Engineering Transactions 2016*
- "Evaluation of a Portable Odorant Recorder ", *Proceedings of Computer on the Beach 2016*
- "ELECTRONIC NOSE: an alternative for measuring and assessing livestock and poultry farm odors", *EMILI 2015*

PRESENTATIONS

- Invited talk: "Text recognition improvement using a novel iterative method and super-resolution", WPGEC, Brazil, 2016
- Invited talk: "A process for text recognition of generic identification documents over cloud computing", WPGEC, Brazil, 2016

ACTIVITIES

- Reviewer for the **IEEE** Transactions on Vehicular Technology (**TVT**), **IEEE** Vehicular Technology Conference (**VTC**).
- Member of Institute of Electrical and Electronics Engineers (**IEEE**); IEEE Communications Society (**IEEE ComSoc**) and Brazilian Computer Society (**SBC**)
- Volunteer teacher in the course introduction to robotics for elementary school students (**2013 ,2014**)

REFERENCES

Yaser P. Fallah
Associate Professor
University of Central Florida
(yaser.fallah@ucf.edu)

Rajan Bhattacharyya
Department Manager
HRL Laboratories, LLC
(rbhattac@hrl.com)

Syed Mahmud
Sr. Research Engineer
Hyundai America Technical Ctr
(SMahmud@hatci.com)