

Sergio Casas

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Experience

Waabi

Toronto, Canada

SENIOR STAFF TECH LEAD MANAGER, PERCEPTION AND PREDICTION

Sep. 2024 - Present

- Responsible for the team's technical vision, roadmap and growth towards driverless trucking

STAFF TECH LEAD MANAGER, PERCEPTION AND PREDICTION

Jul. 2023 - Aug. 2024

- Provided technical leadership to the team in developing the model that helped secure the company's Series B funding

SENIOR TECH LEAD MANAGER (I AND II), PERCEPTION AND PREDICTION

Jul. 2022 - Jun. 2023

- Started the team that owns the end-to-end development of perception and prediction models (including research and production)

SENIOR RESEARCHER

Mar. 2021 - Jul. 2022

- Key contributor to the end-to-end research and development of trajectory forecasting models

Uber Advanced Technologies Group

Toronto, Canada

RESEARCH SCIENTIST II

Mar. 2019 - Feb. 2021

- End-to-end interpretable autonomy models and multi-agent simulation

RESEARCH SCIENTIST

Mar. 2018 - Mar. 2019

- Multi-agent interaction modeling and improved output parameterizations for motion forecasting

RESEARCH INTERN

Oct. 2017 - Mar. 2018

- End-to-end learnable perception and prediction to exploit richer representations and uncertainty propagation

University of Toronto

Toronto, Canada

RESEARCH ASSISTANT (SUPERVISED BY PROF. RAQUEL URTASUN)

Feb. 2017 - Aug. 2017

- Research on automating the NBA Play-by-Play reports using spatio-temporal reasoning and attention mechanisms on tracking data

Arcvi Big Data Agency

Barcelona, Spain

DATA ANALYTICS CONSULTANT

Jun. 2016 - Jan. 2017

- Creation and delivery of strategy solutions for customers in retail, insurance and credit applying ML techniques on their data

Psycle Interactive Ltd.

Whitchurch, United Kingdom

SOFTWARE ENGINEERING INTERN

Jul. 2015 - Sep. 2015

- Document topic classification with non-negative matrix factorization + development of an Android application for a global company

Education

Ph.D. in Computer Science

Toronto, Canada

UNIVERSITY OF TORONTO (SUPERVISOR: PROF. RAQUEL URTASUN)

Jan. 2020 - Oct. 2024

- Thesis: *End-to-End Autonomy with Spatial-Temporal World Models* ([link](#))
- Courses (GPA 4.0): Probabilistic Graphical Models, Graphics and Animation, NN Training Dynamics

M.S. in Computer Science

Toronto, Canada

UNIVERSITY OF TORONTO (SUPERVISOR: PROF. RAQUEL URTASUN)

Sep. 2018 - Jan. 2020

- Thesis: *Joint Perception and Behavior Forecasting for Self-Driving Vehicles*
- Courses (GPA 4.0): Machine Learning, Robotics (Imitation Learning and Reinforcement Learning), ML for Health

B.S. in Computer Science

Barcelona, Spain

UNIVERSITAT POLITÈCNICA DE CATALUNYA

Sep. 2013 - Jul. 2017

- Grade 9.0/10.0, PCTL 1%, Honors in 17 out of 35 subjects. Focus on data structures and algorithms
- Capstone project: *Learning to Analyze Basketball Games: Neural Action Recognition with Visual Attention*

B.S. Industrial Technology Engineering

Barcelona, Spain

UNIVERSITAT POLITÈCNICA DE CATALUNYA

Sep. 2012 - Jul. 2017

- Grade 8.6/10.0, PCTL 1%, Honors in 20 out of 42 subjects. Strong background in algebra, calculus, and optimization

MBA Summer School

Barcelona, Spain

IESE BUSINESS SCHOOL

Jul. 2016

Selected Publications

DeTra: A Unified Model for Object Detection and Trajectory Forecasting

S. CASAS*, B. AGRO*, J. MAO*, T. GILLES, A. CUI, T. LI, R. URTASUN

ECCV 2024

Milan, Italy

UnO: Unsupervised Occupancy Fields for Perception and Forecasting

B. AGRO*, Q. SYKORA*, S. CASAS*, T. GILLES, R. URTASUN

CVPR 2024 (Oral)

Seattle, Washington

QuAD: Query-based Interpretable Neural Motion Planning for Autonomous Driving

S. BISWAS*, S. CASAS*, Q. SYKORA, B. AGRO, A. SADAT, R. URTASUN

ICRA 2024

Yokohama, Japan

Copilot4D: Learning Unsupervised World Models for Autonomous Driving via Discrete Diffusion

L. ZHANG, Y. XIONG, Z. YANG, S. CASAS, R. HU, R. URTASUN

ICLR 2024

Vienna, Austria

ImplicitO: Implicit Occupancy Flow Fields for Perception and Prediction in Self-Driving

B. AGRO*, Q. SYKORA*, S. CASAS*, R. URTASUN

CVPR 2023 (Highlight)

Vancouver, Canada

GoRela: Go Relative for Viewpoint-Invariant Motion Forecasting

ALEXANDER CUI, S. CASAS, KELVIN WONG, SIMON SUO, RAQUEL URTASUN

ICRA 2023 (Award finalist)

London, UK

MP3: A Unified Model to Map, Perceive, Predict and Plan

S. CASAS*, A. SADAT*, R. URTASUN

CVPR 2021 (Best paper candidate)

Virtual

LookOut: Diverse Multi-Future Prediction and Planning for Self-Driving

A. CUI*, S. CASAS*, A. SADAT*, R. LIAO, R. URTASUN

ICCV 2021 (Oral)

Virtual

Implicit Latent Variable Model for Scene-Consistent Motion Forecasting

S. CASAS*, C. GULINO*, S. SUO*, K. LUO, R. LIAO, R. URTASUN

ECCV 2020

Virtual

End-to-end Interpretable Neural Motion Planner

W. ZENG, W. LUO, S. SUO, A. SADDAT, B. YANG, S. CASAS, R. URTASUN

CVPR 2019 (Oral)

Long Beach, California

IntentNet: Learning to Predict Intention from Raw Sensor Data

S. CASAS, W. LUO, R. URTASUN

CoRL 2018

Zurich, Switzerland

* denotes equal contribution. For a complete list of publications, visit my [Google Scholar profile](#).

Awards

2021-22 **Borealis AI Fellowship**, Awarded for outstanding research to top 10 graduate students in Canada

Canada

2019-24 **Vector Institute Research Grant**, Awarded to students supervised by Vector's Faculty Members

Canada

2017 **Fundació Cellex Scholarship**, Excellence prize to carry out my bachelor's thesis in Toronto

Spain

2016 **SocialPoint's Recommender System Datathon**, Winner

Spain

2015 **McKinsey Atrévete**, Selected to participate in the prestigious strategy consulting workshop

Spain

2014 **CFIS-UPC Scholarship**, Full ride for both bachelor degrees

Spain

2013 **CatalunyaCaixa Fellowship**, Top 100 grades at university entrance exams in Catalonia

Spain

Invited Talks

Keynote speaker at VCAD Workshop @ ECCV 2024

UPCOMING PRESENTATION COVERING OUR WORKS COPILOT4D AND UNO

Milan, Italy

Sep. 2024

Keynote speaker at ROAM Workshop @ ECCV 2024

UPCOMING PRESENTATION COVERING OUR WORKS COPILOT4D AND UNO

Milan, Italy

Sep. 2024

All You Need To Know About Self-Driving Workshop @ CVPR 2024

INTRODUCED OUR TUTORIAL AND PRESENTED SECTIONS ON PERCEPTION AND PREDICTION

Seattle, Washington

Jun. 2024

All You Need To Know About Self-Driving Workshop @ CVPR 2023

PRESENTER FOR THE TUTORIAL ON PREDICTION

Vancouver, Canada

Jun. 2023

Reading Group @ Berkeley AI Research lab (BAIR)

PRESENTED MP3 TO PROF. JIANTAO JIAO'S GROUP

Virtual

Nov. 2021

All You Need To Know About Self-Driving Workshop @ CVPR 2021

PRESENTER FOR THE TUTORIAL ON PREDICTION

Virtual

Jun. 2021

Computer Vision Reading Group @ EPFL

PRESENTED 4 OF MY PAPERS ON JOINT PERCEPTION AND PREDICTION TO PROF. ALAHI'S GROUP

Virtual

Oct. 2020

All You Need To Know About Self-Driving Workshop @ CVPR 2020

PRESENTER FOR THE TUTORIAL ON PREDICTION

Virtual

Jun. 2020

Misc

Languages English (TOEFL iBT 114), Spanish (Native), Catalan (Native)

Citizenship Dual Spanish and Canadian

Programming My preferred programming language is Python (Pytorch/Numpy). Limited experience with C/C++, Rust, Go and Java.

Volunteering

Academic Service

REVIEWER FOR CVPR, ECCV, ICCV, ICML, ICLR, CoRL, IROS, NEURIPS, ICRA

N/A

2020 - Present

Feeding Canadian Kids After School Program

AS PART OF UBER'S VOLUNTEERING PROGRAM

Toronto, Canada

2019

Forest restoration camp

INTERNATIONAL CIVIL SERVICE

Lauriano, Italy

Jul. 2014

Basketball Referee

FEDERACIÓ CATALANA DE BASQUETBOL

Catalonia, Spain

2010-2016