Sergio **Casas**

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Experience

Waymo   *Miami, Florida (Remote)*
SENIOR STAFF TECH LEAD MANAGER, BEHAVIORS RESEARCH   *Jan. 2025 - Present*
- Leading an ML research team on behavior modeling, simulation and planning

Waabi   *Toronto, Canada*
SENIOR STAFF TECH LEAD MANAGER, PERCEPTION AND PREDICTION   *Sep. 2024 - Dec. 2024*
- 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   *ECCV 2024*
S. CASAS*, B. AGRO*, J. MAO*, T. GILLES, A. CUI, T. LI, R. URTASUN   *Milan, Italy*

UnO: Unsupervised Occupancy Fields for Perception and Forecasting   *CVPR 2024 (Oral)*
B. AGRO*, Q. SYKORA*, S. CASAS*, T. GILLES, R. URTASUN   *Seattle, Washington*

QuAD: Query-based Interpretable Neural Motion Planning for Autonomous Driving   *ICRA 2024*
S. BISWAS*, S. CASAS*, Q. SYKORA, B. AGRO, A. SADAT, R. URTASUN   *Yokohama, Japan*

Copilot4D: Learning Unsupervised World Models for Autonomous Driving via Discrete Diffusion   *ICLR 2024*
L. ZHANG, Y. XIONG, Z. YANG, S. CASAS, R. HU, R. URTASUN   *Vienna, Austria*

ImplicitO: Implicit Occupancy Flow Fields for Perception and Prediction in Self-Driving   *CVPR 2023 (Highlight)*
B. AGRO*, Q. SYKORA*, S. CASAS*, R. URTASUN   *Vancouver, Canada*

GoRela: Go Relative for Viewpoint-Invariant Motion Forecasting   *ICRA 2023 (Award finalist)*
ALEXANDER CUI, S. CASAS, KELVIN WONG, SIMON SUO, RAQUEL URTASUN   *London, UK*

MP3: A Unified Model to Map, Perceive, Predict and Plan   *CVPR 2021 (Best paper candidate)*
S. CASAS*, A. SADAT*, R. URTASUN   *Virtual*

LookOut: Diverse Multi-Future Prediction and Planning for Self-Driving   *ICCV 2021 (Oral)*
A. CUI*, S. CASAS*, A. SADAT*, R. LIAO, R. URTASUN   *Virtual*

Implicit Latent Variable Model for Scene-Consistent Motion Forecasting   *ECCV 2020*
S. CASAS*, C. GULINO*, S. SUO*, K. LUO, R. LIAO, R. URTASUN   *Virtual*

End-to-end Interpretable Neural Motion Planner   *CVPR 2019 (Oral)*
W. ZENG, W. LUO, S. SUO, A. SADDAT, B. YANG, S. CASAS, R. URTASUN   *Long Beach, California*

IntentNet: Learning to Predict Intention from Raw Sensor Data   *CoRL 2018*
S. CASAS, W. LUO, R. URTASUN   *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   *Milan, Italy*
UPCOMING PRESENTATION COVERING OUR WORKS COPILOT4D AND UNO   *Sep. 2024*

Keynote speaker at ROAM Workshop @ ECCV 2024   *Milan, Italy*
UPCOMING PRESENTATION COVERING OUR WORKS COPILOT4D AND UNO   *Sep. 2024*

All You Need To Know About Self-Driving Workshop @ CVPR 2024   *Seattle, Washington*
INTRODUCED OUR TUTORIAL AND PRESENTED SECTIONS ON PERCEPTION AND PREDICTION   *Jun. 2024*

All You Need To Know About Self-Driving Workshop @ CVPR 2023   *Vancouver, Canada*
PRESENTER FOR THE TUTORIAL ON PREDICTION   *Jun. 2023*

Reading Group @ Berkeley AI Research lab (BAIR) *Virtual*

Presented MP3 to Prof. Jiantao Jiao's group *Nov. 2021*

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

Presenter for the tutorial on Prediction *Jun. 2021*

Computer Vision Reading Group @ EPFL *Virtual*

Presented 4 of my papers on Joint Perception and Prediction to Prof. Alahi's group *Oct. 2020*

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

Presenter for the tutorial on Prediction *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 *N/A*

Reviewer for CVPR, ECCV, ICCV, ICML, ICLR, CoRL, IROS, NeurIPS, ICRA *2020 - Present*

Feeding Canadian Kids After School Program *Toronto, Canada*

As part of Uber's Volunteering Program *2019*

Forest restoration camp *Lauriano, Italy*

International Civil Service *Jul. 2014*

Basketball Referee *Catalonia, Spain*

Federació Catalana de Basquetbol *2010-2016*