



## Mohammadhossein BAHARI

PhD, EPFL

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[mohammadhossein-bahari.github.io](https://github.com/mohammadhossein-bahari)

linkedin

### EDUCATION

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#### Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

2018-now

PhD in Electrical Engineering

- Thesis: Vehicle behavior prediction for self-driving cars
- Advisor: Alexandre Alahi

#### Sharif University of Technology, Iran

2016-2018

M.S in Electrical Engineering, GPA: 19.24/20

- Thesis: simulation and implementation of baseband processing blocks of a Massive-MIMO system based on 5G standard
- Advisor: Mahdi Shabany

#### Sharif University of Technology, Iran

2012-2016

B.S in Electrical Engineering, GPA: 17.56/20

- Thesis: Booting an embedded linux OS on a ZYNQ Board

### PUBLICATIONS

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- "Injecting Knowledge in Data-driven Vehicle Trajectory Predictors", **MH.Bahari**, I.Nejjar, A.Alahi, to be published in *Transportation Research part C (TRC)*, 2021, [link](#).
- Modified title: "Are socially-aware trajectory prediction models really socially-aware?", **MH.Bahari**, S.Saadatnejad, P.Khorsandi, M.Saneian, S. Dezfooli, A.Alahi, *arXiv*, 2021, [link](#).
- "SVG-Net: An SVG-based Trajectory Prediction Model", **MH.Bahari**, V.Zehtab, S.Ayromlou, MS.Khorasani, S.Saadatnejad, A.Alahi, *arXiv*, 2021, [link](#).
- "Modified Joint Channel-and-Data Estimation for One-Bit Massive MIMO", **MH.Bahari**, SR.Rasoulinezhad, M.Amiri, M.Shabany, SA.Nezamalhoseini, to be published in *IEEE International Symposium on Circuits and Systems (ISCAS) 2021*.
- "Feed-forwards meet recurrent networks in vehicle trajectory prediction", **MH.Bahari**, A.Alahi, *Swiss Transport Research Conference*, 2019

Under review works that are not published yet: (Drafts can be made available upon request)

- Modified title: "Causal imitation learning for self-driving cars", M.Samsami, **MH.Bahari**, S.Kaleybar, A.Alahi
- Modified title: "Do vehicle trajectory prediction models really reason over the scene?", **MH.Bahari**, S.Saadatnejad, A.Rahimi, M.Shaverdi, S.Dezfooli, A.Alahi

### RESEARCH EXPERIENCE

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#### Vita lab, EPFL

2018-Now

We study vehicle behavior prediction for self-driving cars using deep learning. More specifically, we are interested in generalizable solutions achieved by building causal models, adding knowledge to them, and better evaluations.

#### Massive MIMO group, Sharif university

2016-2018

Studied efficient design and hardware implementation of joint channel-and-data estimation in massive-MIMO systems with one-bit ADCs.

#### SARVNET Co.

Summer 2014

Modified the NetFPGA project for a 10GB router.

## HONORS AND AWARDS

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- Awarded Marie Skłodowska-Curie Fellowship by the European Union for the doctoral degree, 2018-2022
- Achieving highest GPA among Electrical engineering master students, 2018
- Ranking 5th among almost 25,000 applicants in the nation-wide Entrance Exam for MSc degree, Iran, 2015
- Ranking 54th among almost 300,000 applicants in the nation-wide Entrance Exam for BSc degree, Iran, 2011

## TALKS

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- Workshop on "Vehicle Behavior Prediction in Self-driving Cars from an Industrial Perspective", Winter Webinar Series (WSS), Iran, Dec 2020

## RESEARCH MENTORING

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### Internships

Summer 2020

- Ahmad Rahimi, Mohammad Shaverdi, *adversarial scene generation for vehicle trajectory prediction*
- Ahmad Salimi, Sepehr Ilami, *Unbiased causal trajectory prediction*
- Mohammadreza Samsami, *Causal learning for autonomous planning*
- Pedram Khorsandi, Mohammad Saneian, *adversarial examples in prediction models*
- Vahid Zehtab, Sana Ayramlou, Mohammad Khorasani, *Vector-based representations for trajectory prediction models*
- Hossein Zakernia, Mahdi Nikdan, *Out-of-Distribution Generalization for prediction models*

### Master projects

2019-2021

- Zhecho Mitev, *Continual learning trajectory prediction*
- Mohammadreza Ebrahimi, *Constrained-learning for trajectory prediction*
- Ismail Nejjar, *knowledge-aware safe trajectory prediction*
- Frank Dessimoz, *Overcoming imitation learning challenges in Carla Simulator*

## SKILLS

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**PROGRAMMING** Python | Pytorch | Matlab | C++ | CUDA | Verilog/VHDL | Git  
**LANGUAGES** *Native:* Persian *Fluent:* English *Beginner:* Arabic, French

## OTHER ACTIVITIES

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- Hiking, Reading, Traveling