Houssam Abbas

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Curriculum Vitae **(PDF)**

I am interested in the rigorous design of autonomous systems that are *human-scale* – i.e., that interact with us humans, in our lived environments, and present themselves as reasonably intelligent agents. How do we formalize the ethical obligations of such systems? How do we design their controllers and verify them? How do we secure their dynamics? And how do we learn what's acceptable for them to do in various contexts?

This research draws chiefly on formal methods and logic, but also on control theory, signal processing and machine learning.

And since you asked, I received my B.Eng. in Computer Engineering from the American University of Beirut (Lebanon) and the M.S. and Ph.D. in Electrical Engineering from Arizona State University. I was a research postdoc in the Department of Electrical and Systems Engineering at the University of Pennsylvania. I was a Design Automation engineer in the SoC Verification group at Intel from 2006 to 2014, where I developed functional and low-power verification tools. I also briefly served on the IEEE P1801 Standard Committee (Unified Power Format).

Contact

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News

October 2021 Best paper award for our paper accepted to Runtime Verification 2021 on Predicate Monitoring in Distributed Cyber-physical Systems"! (Link)

May 2021 Gave a talk on "Formalization and Verification of Autonomous Vehicle Obligations" at the meeting of VeHICaL/AA/LogiCS at Berkely (Zoomlandia)

April 2021 Colin's paper on "Algorithmic Ethics: Formalization and Verification of Autonomous Vehicle Obligations" was accepted to the ACM Transactions on Cyber-Physical Systems.

Fall 2020 Co-PI (with Rakesh Bobba and Yeong-Jin Jang) on FAA ASSURE project on the cyber-security landscape for unmanned aerial vehicles.

2020 Niraj's paper on "Logical Signal Processing" was runner-up for Best Paper Award at Runtime Verification 2020.

2020 This thing called covid. One of the symptoms is that you don't feel like updating the news.

Fall 2019 We have been awarded an NSF CCRI grant on the F1/10 Racecar: Community Platforms for Safe, Secure and Coordinated Autonomy! With Rahul Mangharam at Penn and Venkat Krovi at Clemson, this project will develop a nation-wide research infrastructure in autonomous systems!

Spring 2019 OSU EECS and Robotics students: if you want to build and race an autonomous car, request to register for this Spring's Autonomous Driving course here!

January 2019: I am starting as an Assistant Professor in the EECS department at Oregon State UniversityBe