Andreas Soleiman

MSc. graduate at Uppsala University
E-mail: andreas.soleiman@gmail.com
Website: http://ansol.se/
LinkedIn: https://www.linkedin.com/in/andreas-soleiman/

Education

Massachusetts Institute of Technology, Cambridge, MA, USA — September 2020 - ?
PhD. Supervised by Prof. Fadel Adib.

Uppsala University, Uppsala, Sweden — August 2012 - June 2017
Master of Science, Engineering Physics (5+ year Integrated Programme, includes Bachelor's studies)

Appointments

University of Cambridge, Cambridge, UK. — May 2020 - August 2020
Research Intern, supervised by Prof. Nicholas Lane
Assisting the CaMLSys group in designing a battery-free intelligent microphone.

Max Planck Institute for Software Systems (MPI-SWS), Saarbrücken, Germany. — January 2020 - April 2020
Research Intern, supervised by Prof. Peter Druschel
Working with the Distributed Systems Group in analyzing privacy models of mobile social networks.

Uppsala Networked Objects (UNO), Uppsala University, Sweden — June 2017 - November 2019
Research Assistant, supervised by Dr. Ambuj Varshney and Prof. Thiemo Voigt
Conducted research on designing battery-free sensors which includes hardware and software mechanisms related to sensing, wireless communication, and energy-harvesting.

Head of Corporate Relations, Uppsala Engineering Physics Union. — April 2013 - April 2014
Leading the engineering physics union in forming relationships with industry representatives across Sweden.

Honors and Awards

- Selected for the Rising Stars Forum at ACM MobiSys (2019)
- Best demonstration award at ACM WiSec (2018)
- Selected for the Cornell, Maryland, Max Planck Pre-Doctoral Research School (2018)
- Winner of the ACM Student Research Competition at ACM MobiCom (2017)
- Best paper award at ACM VLCS, held in conjunction with ACM MobiCom (2017)

Publications

- Ambuj Varshney, **Andreas Soleiman**, Thiemo Voigt: *TunnelScatter: Low Power Communication for Sensor Tags using Tunnel Diodes,* 25th Annual International Conference on Mobile Computing and Networking (ACM MobiCom 2019), Los Cabos, Mexico (acceptance rate ≈ 19%)
- **Andreas Soleiman**: *Enabling the Next Generation of Wireless Sensors*, ACM Rising Stars Forum at The 17th ACM International Conference on Mobile Systems, Applications, and Services (ACM MobiSys 2019), Seoul, South Korea
- Ambuj Varshney, **Andreas Soleiman**, Luca Mottola, Thiemo Voigt: *Battery-free Visible Light Sensing*, The Fourth ACM Workshop on Visible Light Communication Systems (ACM VLCS 2017, in conjunction with ACM MobiCom), Snowbird, Utah, USA (Best paper award)

Posters & Demos

- **Andreas Soleiman**, Ambuj Varshney: *Poster: Towards Backscatter-enabled Networked Utensils*, The 17th ACM International Conference on Mobile Systems, Applications, and Services (ACM MobiSys 2019), Seoul, South Korea
- **Andreas Soleiman**, Ambuj Varshney: *Demo: Backscatter-enabled Polymorphic Light Sensors*, The 17th ACM International Conference on Mobile Systems, Applications, and Services (ACM MobiSys 2019), Seoul, South Korea

- Abdullah Hylamia, Ambuj Varshney, **Andreas Soleiman**, Panagiotis Papadimitratos, Christian Rohner, Thiemo Voigt *Demo: Towards Battery-free Radio Tomographic Imaging*, In Proceedings of the 11th ACM Conference on Security and Privacy in Wireless and Mobile Networks (ACM WiSec 2018), Stockholm, Sweden (Best demonstration award)
- **Andreas Soleiman**, Ambuj Varshney, Thiemo Voigt *Poster: Battery-free Visible Light Sensing*, 23rd Annual International Conference on Mobile Computing and Networking (ACM MobiCom 2017), Snowbird, Utah, USA
  (Poster won the 1st prize at the ACM Student Research Competition at ACM MobiCom 2017)

Academic Service

- External Reviewer of IMWUT (2019, 2020)
- Program Commitee member of the ACM S3 Workshop, held in conjunction with ACM MobiCom (2019)

Teaching Experience

Teaching Assistant
Uppsala University, Uppsala, Sweden

- UU-61208: Internet of Things — January 2018 - March 2018
- 1TE661: Signals and Systems — September 2015 - January 2016

Other projects

Battery-free indoor localization — Fall 2016
Designed a battery-free indoor localization system that could identify the presence of nearby objects or people. The system leveraged solar cells as passive sensors and harvesting units, and radio frequency backscatter for communicating shadow information at a few microwatts of power.

Using Deep Reinforcement Learning to Play Games — Spring 2017
Implemented a Deep Q-Learning agent using PyTorch with the purpose to play games from OpenAI's Gym environment. The agent could be trained to play e.g. *Pong* and *Space Invaders* on a superhuman level.

A Training Session With a NAO Robot — Spring 2017
Trained a NAO Robot using machine learning techniques to educate a simple exercise session for elderly and disabled people. The NAO robot was able to determine whether an exercise was correctly executed or not in real-time by using an Xbox Kinect to record the skeletal joints of people and a classifier to compare these to the expected joint positions during the exercise session.

Technical skills

- **Eagle CAD**: Hardware design
- **Python**: signal processing, statistical machine learning and data visualization
- **C**: Embedded systems programming
- **Matlab + Simulink**: Computational physics and automatic control systems design
- **R**: Statistics
- **Java/Kotlin**: Mobile applications
- **Erlang and Standard ML**: Basic level distributed systems programming

Languages

- Swedish (mother tongue)
- English (fluent)
- Arabic (intermediate level)