

Andreas Soleiman

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COMPETENCE PROFILE

- MSc. graduate in Engineering Physics at Uppsala University.
- 3 years of research experience in designing sustainable IoT solutions.
- Experienced in working on research projects in Germany (MPI-SWS) and in the UK (Oxford/Cambridge).
- Experienced technical and academic writer.
- Experienced teacher and public speaker.

SELECTED PRESS

- Oxford Seminar, *Towards Sustainable Widespread Sensing*. <http://www.cs.ox.ac.uk/seminars/2304.html>
- Coverage by elektroniktidningen, *Forskning: Koppen kan berätta om kaffet är varmt*
<https://etn.se/index.php/nyheter/65787-forskning-koppen-kan-beratta-om-kaffet-ar-varmt.html>
- ABB Research Award 2019 goes to battery-free sensor project.
<https://new.abb.com/news/detail/46277/abb-research-award-2019-goes-to-battery-free-sensor-project>

EDUCATION

Uppsala University, Uppsala, Sweden

August 2012 - June 2017

Master of Science, Engineering Physics (5+ year Integrated Programme, includes Bachelor's studies)

WORK EXPERIENCE

University of Cambridge, Cambridge, UK.

May 2020 - August 2020

Research Intern, supervised by Prof. Nicholas Lane

Assisting the Cambridge Machine Learning Systems Lab (CaMLSys) in the design of a battery-free intelligent microphone. I built an energy harvesting circuit using a solar powered Artemis ATP that encodes low power audio signals using a TensorFlow Lite enabled speech recognition algorithm.

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. Helped design a graph representation of an encounter based social network and implemented it using Python. The algorithm filters through a data set and identifies encounters based on their relative coordinates within a defined radius.

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. The outcome of this work is peer-reviewed and published at top-tier academic conferences for mobile computing and visible light communication, including ACM VLCS 2017 (Co-located with ACM MobiCom 2017), ACM WiSec 2019, and ACM MobiCom 2019.

Teaching Assistant

Uppsala University, Uppsala, Sweden

• UU-61208: Internet of Things

January 2018 - March 2018

• 1TE661: Signals and Systems

September 2015 - January 2016

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 \approx 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)

TECHNICAL SKILLS

- **C / C++**: Embedded systems programming
- **Java/Kotlin**: Mobile applications
- **Eagle CAD**: Hardware design
- **Erlang and Standard ML**: Distributed systems programming
- **Matlab + Simulink**: Computational physics and automatic control systems design
- **R**: Statistics
- **Python**: signal processing (e.g. Scipy, filters and FFTs), machine learning (TensorFlow/Pytorch, Scikit-learn) and data visualization (Matplotlib, ggplot)

LANGUAGES

- **Swedish** (native proficiency)
- **Arabic** (native proficiency)
- **English** (full professional proficiency)
- **Mandarin** (elementary proficiency)
- **French** (elementary proficiency)