

# Daniel Schwyn

PHD STUDENT · SYSTEMS RESEARCHER

Systems Group, ETH Zürich

✉ daniel.schwyn@inf.ethz.ch | 🏠 danielschwyn.ch | 📄 dasch8 | 📱 dasch8 | 📺 dasch8

## Education

### ETH Zürich

DOCTOR OF SCIENCE (PHD) IN COMPUTER SCIENCE

- Research Focus: Declarative Power Management
- Advisor: Prof. Dr. Timothy Roscoe

Zürich, Switzerland

February 2019 - PRESENT

### ETH Zürich

MASTER OF SCIENCE (MSc) IN COMPUTER SCIENCE

- Thesis: Hardware Configuration with Dynamically-Queried Formal Models
- Advisor: Prof. Dr. Timothy Roscoe

Zürich, Switzerland

September 2016 - January 2018

### ETH Zürich

BACHELOR OF SCIENCE (BSc) IN COMPUTER SCIENCE

- Thesis: Implementation of a Smartphone-based Visible Light Communication System using the Audiojack as a Communication Frontend
- Advisor: Prof. Dr. Thomas Gross

Zürich, Switzerland

September 2011 - September 2015

## Professional Experience

### Systems Group, ETH Zürich

RESEARCH ASSISTANT

- Enzian: Trustworthy baseboard management firmware for the Enzian research computer
- Sockeye: Formal specifications for hardware as seen by software
- Barrelfish: Member of the core OS team working on integrating information from formal hardware models

Zürich, Switzerland

February 2019 - PRESENT

### Artificial and Human Intelligence Group, Siemens AG

RESEARCH ENGINEERING INTERN

- Implemented a prototype of an augmented reality application for an industrial use case
- Built demos for using semantic technologies to connect information sources
- Technologies: Unity, OPC UA, Z3, JavaScript, TypeScript

Berkeley (CA), USA

March 2018 - September 2018

### Last Minute Table GmbH

COFOUNDER & SOFTWARE ENGINEER

- Online platform for revenue management for restaurants
- Frontend Developer
- Technologies: Angular, TypeScript

Lenzburg, Switzerland

April 2016 - May 2018

### AdNovum AG

SOFTWARE ENGINEERING INTERN

- iOS and Android Development
- Technologies: Objective C, Java, XCode, Eclipse, ANT

Zürich, Switzerland

October 2014 - May 2015

### Wearable Computing Lab, ETH Zürich

ANDROID DEVELOPER

- Implemented a new user interface for an app that helps patients with Parkinson's disease with gait problems
- Redesigned the architecture of the existing prototype from ground up
- Ported the app to Google Glass

Zürich, Switzerland

February 2014 - May 2014

## Publications

### A model-checked I<sup>2</sup>C specification

LUKAS HUMBEL, DANIEL SCHWYN, NORA HOSSLE, RONI HÄCKI, MELISSA LICCIARDELLO, JAN SCHÄR, DAVID COCK,  
MICHAEL GIARDINO AND TIMOTHY ROSCOE

SPIN 2021

2021

### mmapx: Uniform Memory Protection in a Heterogeneous World

RETO ACHERMANN, DAVID COCK, RONI HÄCKI, NORA HOSSLE, LUKAS HUMBEL, TIMOTHY ROSCOE AND DANIEL SCHWYN

HotOS'21

2021

## A Digital Companion for Air Travelers

KIMBERLY GARCÍA, DANIEL SCHWYN AND FLORIAN MICHAHELLES

MobileHCI'20

2020

## Secure Memory Management on Modern Hardware

RETO ACHERMANN, NORA HOSSLE, LUKAS HUMBEL, DANIEL SCHWYN, DAVID COCK AND TIMOTHY ROSCOE

arXiv:1911.08773

2020

## CleanQ, a lightweight, uniform, formally specified interface for intra-machine data transfer

RONI HÄCKI, LUKAS HUMBEL, RETO ACHERMANN, DAVID COCK, DANIEL SCHWYN AND TIMOTHY ROSCOE

arXiv:1911.08773

2019

## A Least-Privilege Memory Protection Model for Modern Hardware

RETO ACHERMANN, NORA HOSSLE, LUKAS HUMBEL, DANIEL SCHWYN, DAVID COCK AND TIMOTHY ROSCOE

arXiv:1908.08707

2019

## From sound to sight: Using audio processing to enable visible light communication

STEFAN SCHMID, DANIEL SCHWYN, KAAAN AKŞIT, GIORGO CORBELLINI, THOMAS R. GROSS AND STEFAN MANGOLD

GC Wkshps'14

2014

## Student Mentoring Experience

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### Real-time Board Management using an FPGA Bachelor's Thesis

SARAH TRÖNDLE

ETH Zürich

April 2021

### Towards high-assurance Board Management Controller software Master's Thesis

CEDRIC HEIMHOFER

ETH Zürich

March 2021

### A model-based approach to platform-level power and clock management Bachelor's Thesis

JASMIN SCHULT

ETH Zürich

August 2020

## Teaching Experience

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### Advanced Operating Systems (263-3800-00L)

TEACHING ASSISTANT

ETH Zürich

Spring Semester 2021

### Systems Programming and Computer Architecture (252-0061-00L)

TEACHING ASSISTANT

ETH Zürich

Fall Semester 2020

### Advanced Operating Systems (263-3800-00L)

TEACHING ASSISTANT

ETH Zürich

Spring Semester 2020

### Systems Programming and Computer Architecture (252-0061-00L)

TEACHING ASSISTANT

ETH Zürich

Fall Semester 2019

### Advanced Operating Systems (263-3800-00L)

TEACHING ASSISTANT

ETH Zürich

Spring Semester 2019

## Extracurricular Activity

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### VBC Kanti Baden

VOLLEYBALL YOUTH COACH

Baden, Switzerland

April 2010 - PRESENT