Andres Erbsen

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Education

Massachusetts Institute of Technology (e. 2017)
Candidate for Bachelor's degree in Computer Science

College Level Online Courseware (2012-2013)

MIT	Circuits & Electronics	Solid State Chem.
Stanford	Algorithms	Information Security
	Cryptography, taught by Dan Boneh	
Udacity	Software Testing	Applied Crypto.
	Artificial Intelligence	AI for Robotics
other	Quantum Computing	Comp. Architecture

Tallinn Secondary Science School (2010-2013)
Survived high school. GPA 5.0/5, class rank #1

Awards/Olympiads

World	Physics 2012 (silver medal), Linguistics '13 Informatics '12,'13 (bronze), Astronomy '11
Int'l	Baltic Informatics '11,'12,'13 (silver medal) Estonian-Finnish Physics '12,'13 (3rd awards)
other	Estonian Informatics '11,'12,'13 (1st,1st,1st) Lincoln Labs CTF '13 (1st team)

Skills

Natural Languages
English, Estonian (native), Russian (conversational)

Computer Languages
Python, Go, C++, C, Haskell, SQL, LaTeX, Bash

Tools
Linux CLI, postgres, cmake, git, ssh, initscripts, systemd

Extracurricular Activities

Learn Jiu jitsu (Sept 2013–*present*)

Taught programming to middle-school (2011, 2012)
- Familiarized 20 students with the basics of algorithms

Participated in drama club (2009–2010)
- Participated and earned awards at the national festival

Ran school newspaper (2008–2010)
- Typeset and edited, wrote 2 pieces 5 times a year

Experience

Massachusetts Institute of Technology (Sept'13–*present*)
Undergraduate Researcher with Doctor Nickolai Zeldovich
at Computer Science and Artificial Intelligence Laboratory
- Design and implement alternative public-key infrastructure
- Aiming to make cryptographic privacy more accessible

Student Lab Assistant
- Introduction to Electrical Engineering and Computer Science
- Assist 40 students and participate in planning the labs

Airmarkr (summer 2013)
- Devised a phone app that lets you draw in the air
- Implemented a non-realtime prototype (in a team of 4)

Independent projects
Designed and implemented in various programming languages

Research about resiliency in computer networks (2012–*present*)
- Open networks will inevitably have malicious participants
- The goal is to reduce the harm they can cause

MIT SIPB automatic PGP Certification (Sept 2013–*present*)
- Designed and built system for automatic PGP key validation
- Intended to make private email more accessible to students

Fast optimal solver for dormitory room assignment (Oct 2013)
- Takes students' room and roommate preferences as input
- Calculates the optimal assignment in subexponential time

Verifiable alternative to Estonia's online voting (Jun 2013)
- Online voting is being disputed as prone to counter fraud
- Allow anyone to audit the counting process
- Implemented it, including a linkable group signature scheme
- Anonymity is preserved: among 1000 per 1s computation

Collaboration website for schoolmates (2010–2013)
- Managed a wiki-like site with 60 users and 100 pages

Several encoders and decoders (2012–2013)
- Designed an encoding of binary data as English words
- Implemented asymptotically efficient base conversion [2..256]

Email prioritization using machine learning (Sept 2012)
- Evaluated 5 classifiers and 10 feature extractors
- Implemented an offline sytem that outperforms Gmail's

Estobuntu (Jun 2010–2011)
- Participated in the development of a free Linux distribution
- Ported it to a new desktop environment
- Reorganized packaging system and build scripts