Andrey Akhmetov

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Experience

- **Google** — **New York, NY**
  Software Engineer, EngProd — *Summer 2020–Present*
  Writing custom tooling for development and testing of high-performance storage systems, enabling partner teams to target new features, platforms, and levels of throughput in the systems powering Google's storage stack.
- **Google** — **Kirkland, WA and New York, NY**
  Software Engineering Intern, Tools and Infrastructure — *Summers 2018, 2019*
  Developed integration test tooling in C++ and Java to improve understanding and debugging of complex and non-hermetic test environments, reducing toil and workload needed to triage test failures.
- **Totem Power** — **Bedford Hills, NY**
  Electrical Engineering Intern — *Summer 2017–Spring 2018*
  Developed connected battery control and load management systems, from rough design to mass-production-ready PCB implementation. Work included analog metering, digital communication, and control of high-voltage/high-current buses.

Education

- **The Cooper Union** — **New York, NY**
  Electrical Engineering Masters, 4.0 GPA. — *Fall 2020–Present*
  Graduate-Level Coursework: Natural Language Processing, Bayesian Machine Learning, Deep Learning, DSP Hardware, Advanced Computer Architecture, Computer Graphics, Satellite Communications, Smart Cities Vertically Integrated Project.
- **The Cooper Union** — **New York, NY**
  Electrical Engineering Undergraduate, 3.94/4.0 GPA. — *2016–2020*
  Organizations: Tau Beta Pi, Association for Computing Machinery, IEEE-*Eta Kappa Nu*, Order of the Engineer
  Academic Positions: Teaching assistant for Operating Systems and Analog VLSI.

Leadership and Group Projects

- **Covert Acoustic Transmission Scheme** — *Fall 2019–Spring 2020*
  Senior Project performed in partial fulfillment of undergraduate ECE degree. Developed a system to transmit digital information over an inaudible wideband OFDM channel hidden under music. Designed and validated new techniques for data transmission and channel estimation in the low-signal-power regime.
- **Tooling Subteam Lead - HackCooper 2019** — *Spring 2019–Fall 2019*
  Led a team writing software which powered registration, check-in, and judging for the HackCooper hackathon.
- **Control Electronics Lead - Cooper Union Hyperloop** — *Spring 2018–Spring 2019*
  Acted as design lead and primary designer for the Cooper Union Hyperloop's electronic control systems, with a focus on a robust, modular design for safety, during the team's first season. Worked with the school administration and other stakeholders to resolve safety issues identified during the season.

Notable Personal Projects

- **Electrical Engineering Masters' Thesis Project** — *Fall 2020-Present*
  Developing an RF receiver chain for 2.4 GHz communication using TSMC's 180 nm process and integrated FBAR resonator.
- **CMOS Fully Differential Amplifier** — *Spring 2019*
  Designed a high-speed CMOS differential amplifier as a VLSI course project, using TSMC's 180nm process.
- **CUDA 3D renderer** — *Spring 2017*
  Wrote a 3D-capable software rasterizer and shader pipeline using CUDA and C++ for learning purposes.
- **Queens Plaza Interlocking Simulator** - *Digital Logic Design Course* — *Fall 2016*
  Simulated signals and train control in the New York City subway using discrete CMOS logic and an FPGA.
- **'railfish'** - *Facebook Global Hackathon 2016* — *Fall 2016*
  Created routing engine and backend for a system that crowdsources realtime transit insights.
- **8-bit CPU on FPGA (Verilog, Spartan-3E)** — *Summer 2015*
  Imnplemented an 8-bit CPU core. Designed custom ISA, wrote sample programs to verify functionality.