



Trevor Vannoy

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tvannoy 

EDUCATION

- Aug 2017 – Present **PhD Electrical Engineering**, *Montana State University*, Bozeman, MT.
- Aug 2017 – May 2020 **M.S Electrical Engineering**, *Montana State University*, Bozeman, MT.
Thesis: *Enabling Rapid Prototyping of Audio Signal Processing Systems using System-on-Chip Field Programmable Gate Arrays*
- Aug 2012 – May 2016 **B.S. Electrical Engineering**, *Montana State University*, Bozeman, MT.
Computer Engineering minor, 4.0 GPA, Highest Honors

RESEARCH EXPERIENCE

- May 2020 – Present **Graduate Research Assistant**, *Montana State University*, Bozeman, MT.
◦ Object detection with airborne lidar
- Aug 2017 – May 2019 **Graduate Research Assistant**, *Montana State University*, Bozeman, MT.
◦ Development of an Open FPGA-based Speech Processing Platform
- Aug 2015 – May 2016 **Undergrad Research Assistant**, *Montana State University*, Bozeman, MT.
◦ Development of an FPGA Platform for Automating Laboratory Equipment
- June – Aug 2015 **Lee Teng Research Intern**, *Argonne National Lab*, Lemont, IL.
◦ Control system modeling and stability analysis of an adaptive noise suppression system for the Advanced Photon Source particle accelerator

WORK EXPERIENCE

- May 2019 – Aug 2020 **Engineer**, *Flat Earth Inc.*, Bozeman, MT.
◦ SoC FPGA and microcontroller development
◦ Audio and radar signal processing
◦ Linux server administration
- June 2016 – July 2017 **Embedded Software Engineer**, *Fluke Calibration*, Everett, WA.
◦ Developed a graphical application in Python to aid hardware bring-up
◦ Designed and wrote firmware for a multifunction electrical calibrator
- May – Aug 2014 **Engineering Intern**, *Western Area Power Administration*, Billings, MT.
◦ Developed statistical data analysis software in Microsoft Excel VBA and Python to compare power system model parameters with historical data

TEACHING EXPERIENCE

- Aug 2018 – Present **Graduate Teaching Assistant**, *Montana State University*, Bozeman, MT.
◦ SoC FPGAs I ◦ Digital Signal Processing
◦ SoC FPGAs II ◦ Circuits II

Aug 2015 – May 2016 **Undergrad Teaching Assistant**, Montana State University, Bozeman, MT.
 ◦ Introduction to Electrical Engineering

CONFERENCE PUBLICATIONS

Trevor Vannoy, Dylan Wickham, Dustin Sobrero, Connor Dack, Ross Snider, and Tyler Davis. “Design of Audio Processing Systems with Autogenerated User Interfaces for System-on-Chip Field Programmable Gate Arrays”. In: *Audio Engineering Society Convention 149*. Oct. 2020. URL: <http://www.aes.org/e-lib/browse.cfm?elib=20965>.

Trevor Vannoy, Jacob Senecal, and Veronika Strnadova-Neeley. “Improved Subspace K-Means Performance via a Randomized Matrix Decomposition”. In: *2019 IEEE Global Conference on Signal and Information Processing (GlobalSIP)*. IEEE, Nov. 2019. DOI: 10.1109/globalcip45357.2019.8969298.

Trevor Vannoy, Tyler Davis, Connor Dack, Dustin Sobrero, and Ross Snider. “An Open Audio Processing Platform Using SoC FPGAs and Model-Based Development”. In: *Audio Engineering Society Convention 147*. Oct. 2019. URL: <http://www.aes.org/e-lib/browse.cfm?elib=20623>.

CONFERENCE ABSTRACTS

Matthew Blunt, Hezekiah Austin, **Trevor Vannoy**, Tyler Davis, and Ross Snider. “Real-time implementation of an auditory nerve model using a system-on-chip field-programmable gate array”. In: *The Journal of the Acoustical Society of America* 148.4 (Oct. 2020), pp. 2468–2468. DOI: 10.1121/1.5146826.

Ross Snider, Matthew Blunt, **Trevor Vannoy**, Dustin Sobrero, Dylan Wickham, and Tyler Davis. “Implementing the open master hearing aid on a system-on-chip field programmable gate array”. In: *The Journal of the Acoustical Society of America* 148.4 (Oct. 2020), pp. 2508–2508. DOI: 10.1121/1.5146971.

Ross K. Snider, **Trevor Vannoy**, James Eaton, Matthew Blunt, E. Bailey Galacci, Justin Williams, and Tyler B. Davis. “Real-time audio signal processing using system-on-chip field programmable gate arrays”. In: *The Journal of the Acoustical Society of America* 146.4 (Oct. 2019), pp. 2879–2879. DOI: 10.1121/1.5136987.

SERVICE

- 2019 – 2020 Senior Design team advisor
- 2021 – 2018, 2016 Montana FIRST LEGO League Robotics volunteer
- 2021, 2019, 2018 Montana Science Olympiad event captain
- 2018 Presenter for Belgrade Library’s youth summer program
- 2018 Mentor for Belgrade Library’s Google CS-First program
- 2020, 2018 Montana State University Family Science Night volunteer
- 2017 Montana Science Olympiad volunteer

HONORS AND AWARDS

- 2020 Graduate Award in Teaching Excellence
- 2019 ECE Outstanding Teaching Assistant of the year
- 2017 College of Engineering Benjamin Fellowship

- 2016 Top Student in Electrical Engineering
- 2016 Outstanding Senior in Electrical and Computer Engineering
- 2015 Outstanding Junior in Electrical and Computer Engineering
- 2015 Kathryn S. & Walter L. Titus Jr. Memorial Scholarship
- 2014, 2013 Len G. Robbins Memorial Scholarship
- 2013 NorthWestern Energy Community Works Scholarship
- 2012 Montana University System Honors Scholarship