

BRENDAN KRISTIANSEN

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PROFESSIONAL EXPERIENCE

AgTerra Technologies, Inc.

Product Engineer

Jan. 2022 - Present

Sheridan, WY

- Leads the research and development on AgTerra's data collection equipment. Responsibilities include chip selection, firmware development, PCB design and prototyping, and basic mechanical design. As the primary person involved in product design, I also work closely with the marketing and manufacturing teams to efficiently bring the product to market and mitigate supply chain issues.

NWB Sensors, Inc.

Software Engineer (May 2020 - Jan. 2022), Engineering Intern (Feb. 2019 - May 2020)

Feb. 2019 - Jan. 2022

Bozeman, MT

- Wrote the entire application that facilitates data collection and real time processing on an agricultural field mapping system. Works closely with the scientist who leads development of the AI that powers the processing in that system. Helped author the original firmware to communicate with all hardware in a snowpack sensor system from an ARM microcontroller. Also wrote a significant portion of the software running on a cloud mapping system based around an infrared camera. Developed a deep understanding of the Linux kernel, and Raspberry Pi and Nvidia Jetson ecosystems.

Gianforte School of Computing - Montana State University

Undergraduate Course Assistant

Sept. 2018 - Dec. 2018

Bozeman, MT

- Helped students taking CSCI 107 at MSU better understand Python and the computer science concepts taught in that class. Responsibilities included grading assignments for CSCI 107 and maintaining office hours where students may seek help in any computer science course they are taking.

Datasynthesis

Independent Contractor

Aug. 2016 - Feb. 2017

Red Lodge, MT

- Maintained databases containing patient mental health records and generated reports based on this data. While working, I had access to confidential patient information, and was required to keep this information secure in accordance with HIPAA.

EDUCATION

Montana State University, Bozeman, MT

B.S. in computer science

Graduated: May 2020

Completed Coursework: *Computer Security, Networks, Operating Systems, Database Systems, Computational Biology, Computer Vision, Computer Graphics, Computer Architecture, Systems Administration, Computer Science Theory, Concepts of Programming Languages, Software Engineering, Multivariable Calculus, Linear Algebra.*

ACADEMIC RESEARCH

Fortran-Silo

Undergraduate Research conducted under Dr. David Millman and Dr. Mark Owkes

Aug. 2017 - Aug. 2019

Montana State University

- Silo is a C library written by the Lawrence Livermore National Laboratory that streamlines the process of reading/writing data in HDF5. Fortran-Silo is a set of wrappers in Fortran that provide researchers an interface to functionality only implemented in C. Project Repository: <https://gitlab.com/bek3/fortran-silo.git>

NeuroCAVE*Undergraduate Research conducted under Dr. David Millman*

April 2017 - Aug. 2017

Montana State University

The NeuroCAVE Collaborative is a team of artists, music technologists, and computer scientists whose goal is to create an interactive environment where a participant's brain activity is measured and used to change the environment around them. My role in the project was to automate the the process of pairing a set of computers each to a bluetooth headset using Google Firebase to host the configuration. In 2017, the Cave spent 4 months on display at the Holter Museum of Art in Helena, MT and 6 months on display in MSU's Norm Asbjornson Hall in 2019.

Project Repository: <https://github.com/dlm/msu-cave.git>

MSU Storytelling with Alice*Undergraduate Research conducted under Dr. Brittany Fasy*

Oct. 2016 - May 2019

Montana State University

Storytelling is a group of computer scientists and educators whose goal is to introduce computer science to middle schoolers across Montana by incorporating computer science concepts into the Indian Education for All requirements in Montana's public schools. The team uses Alice as the primary teaching tool and regularly conducts outreach events to introduce students to Alice. My role with the team is to generate new outreach guides that will better tie IEFA into computer science education.

Project website: <http://www.montana.edu/storytelling/>

SKILLS

Languages	Python, C/C++, Kotlin, Vue.JS, C#, SQL, Java, Fortran, Matlab, L ^A T _E X
Development Tools and Libraries	Git, Mercurial, JetBrains IDEs, Visual Studio, MariaDB, Wireshark Microsoft SQL Server, CMake, GNU Compilers, Valgrind, Scapy, OpenCV Tensorflow, Entity Framework, OpenGL, Ghidra, Atlassian Jira
Standards and Protocols	HTTP, TCP, UDP, SPI, I ² C
Operating Systems	Arch and Ubuntu, Windows Server/Workstation, Linux From Scratch
Other Skills	QGIS, KiCAD, Autodesk Inventor/AutoCAD/Fusion, Adobe Photoshop/Illustrator, Logic Pro X
Certificates and Licenses	Microsoft Azure Data Fundamentals (DP-900), Ham Radio - Technician, GMRS

PUBLICATIONS

Brittany Terese Fasy, Stacey A. Hancock, Barbara Z. Komlos, Brendan Kristiansen, Samuel Micka, and Allison S. Theobald. 2020. Bring the Page to Life: Engaging Rural Students in Computer Science Using Alice. In Proceedings of the 2020 ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE '20). Association for Computing Machinery, New York, NY, USA, 110–116. <https://doi.org/10.1145/3341525.3387367>

AWARDS/ACHIEVEMENTS**Undergraduate Scholars Program***Montana State University*

Jan. 2018, Sept. 2018

The Undergraduate Scholars Program at Montana State University is a scholarship program intended for undergraduate students involved in research on campus. Students apply for funding to complete a project they chose to work on with a faculty sponsor, and if accepted, receive a stipend for their work. I recieved funding for my work with Storytelling with Alice for Spring and Fall semesters of 2018.