Ryan Burgert

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ACADEMICS:
School: Stony Brook University Senior: Double Major in Computer Science and Applied Mathematics
Current GPA: 3.66

PROFICIENCIES:
Languages: Python, Java, MATLAB, C++, C, C#, MIPS, Latex, HTML, CSS, Node.JS
Tools and Libraries: OpenCV, Arduino, Zsh, Vim, Blender3D, FL Studio, Audacity, Photoshop, Filter Forge, Unreal Engine, Processing, Unity3D, Intellij, PyCharm, Repetier, Simplify3d, Pytorch, Jupyter

EXPERIENCE:
Zebra Technologies: Engineering internship, Summer 2018: Designed and implemented a computer-vision system to track boxes in warehouses. Used OpenCV, C++, Python, and the NVIDIA Jetson.
Air Techniques: Software internship, Summer 2017 and Winter 2017-2018: Created software to analyze the image quality of dental x-ray scanners, following the FDA's specifications. My software let engineers test their hardware in-house, instead of sending it to Germany. Programmed in MATLAB.
Honors CS Research: Creating an online biomedical virtual laboratory environment called "Lab In a Cube", which will let professors prepare students for upcoming labs. Currently working with Prof. Richard McKenna and Dr. Mei Lin Ete Chan from Stony Brook's computer science and biomedical engineering departments. Will be used by over 2000 students once completed.
Research: Co-authored "A Fish Out of Water: The Archer Fish's Rocket-Like Launch", which was presented at the Gallery of Fluid motion at the 71st Annual Meeting of the APS Division of Fluid Dynamics, 2018. Created a photorealistic animation for the presentation using Blender3D. The paper can be found at gfm.aps.org
Teaching Assistant: Spring 2017; taught a recitation for Prof. Paul Fodor in CSE114 (introduction to Java)

CLUBS:
Stony Brook Robot Design Team: Fall 2015 to present; currently the software team leader. Helped grow the team from about 20 members in 2015 to over 70 members today. Currently working on the University Rover Challenge, to create a working mars rover robot which will compete internationally. Leading our transition robot's codebase from C++ to Python, and developing a vision system to let our rover navigate autonomously across miles of terrain.
Stony Brook Game Developers Club: Fall 2015 to present; currently the vice president. This club serves to teach people how to use game engines, and hosts guest speakers from the industry.
Music and Medicine: Fall 2017 to present. In this club we play live music as a group for hospital patients. I play the Lightwave, which is the name I gave an instrument I invented (see directly below).

PROJECTS:
Lightwave: A unique electronic synth instrument I invented from scratch as a personal project. In addition to Music and Medicine (see above), I also performed for the incoming class of CS students during orientation 2018.
Art Robot: For a robotics course, created a robotic arm that creates 3d color light paintings, controlled with a Wacom tablet.
Personal Projects: Created a modular synthesis library for Java called jWave; created an album called "Magnified" on iTunes and Spotify; created a chess engine called PyChess; published a Python REPL on PyPI under "rp"
Course Site Generator: A JavaFX-based tool designed to create websites for different academic classes. Created for CSE219, written with over 10,000 lines of Java.
Seamless Texture Generator: Wrote a program that makes useable game textures from nearly any input image. Using a variation on neural style transfer in PyTorch, my program makes images tileable by removing their seams. Wrote an accompanying research paper (which can be found on my GitHub).

AWARDS:
CEWIT Hackathon 2017: Won two awards at the inaugural CEWIT (Center of Excellence for Wireless and Information Technology) hackathon for "Know Before You Go," an app that uses computer vision to tell people where available parking spaces are in Stony Brook University. The project was featured in both Newsday and the Statesman (Stony Brook's newspaper).
Stony Brook University Scholars: Among 3% of accepted students admitted
Stony Brook Honors CS Program: Among the minority of CS students accepted as of Fall 2017
Stony Brook Scholarships: Was presented the CEAS Dean's Scholarship and Presidential Scholarship from Stony Brook University upon acceptance