AUSTEN ASHWIN GABRIELPILLAI

CURRICULUM VITAE

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EDUCATION

5/2017 **Bachelor of Science in Engineering Physics**
University of Illinois, Urbana-Champaign
Major: Engineering Physics
Concentration: Computer Science
Major GPA: 3.04/4.00
Cumulative GPA: 3.05/4.00

RESEARCH EXPERIENCE

5/2016 – 8/2016 **Research Intern**
Atomic Physics Group, Technische Universität Darmstadt

Under the supervision of Zoran Andelkovic, PhD, and Wilfried Nörtershäuser, PhD
Responsibilities: Participated in high- and low-energy physics research investigating ion beam properties in particle accelerators at GSI Helmholtz Center for Heavy Ion Research. Regularly utilized lab equipment, including vacuum pumps, ion sources, high voltage appliances, and oscilloscopes. Advanced efforts to bring a local 15-meter accelerator back online. Manipulated accelerator components and took diagnostics along a 15-meter beam line. Directed ion beams along 100 meters of beam line as part of a facility wide development project. Analyzed 83 samples using OriginLab and Microsoft Excel to analyze particle beam quality. Redesigned a schematic for clarity using Inkscape. Created a script in LabVIEW allowing for instantaneous channel switching between FPGA cards as part of the development of a GUI.

2/2014 – 5/2014 **Research Assistant**
Energy Physics Lab, University of Illinois

Under the supervision of Alfred Hubler, PhD
Responsibilities: Contributed in energy physics research relating to Steiner Trees and provided experimental results toward the creation of a simulation in MATLAB. Reviewed relevant journals and provided weekly updates at a general meeting. Constructed basic circuitry to run and maintain the experiment.

PROJECT EXPERIENCE

10/2016 – 11/2016 **Independent Researcher**
Modern Experimental Physics, University of Illinois

Responsibilities: Investigated optical properties of induced ferroelectric phase transitions in PMN-PT 10%. Utilized polarized light microscopy techniques for observing samples. Operated sensitive equipment and temperature control systems. Verified a relationship between temperature/electric field and state transition time. Reviewed relevant literature on ferroelectric materials and field cooling techniques.

1/2015 – 5/2015 **Game Engine Developer**
Computer Science Honors Seminar, University of Illinois

Responsibilities: Served on the development team for the Unity game Orchestral Zombie Apocalypse as a combat and audio developer. Overhauled 2 outdated combat scripts in C# by resolving audio storage and playback issues. Implemented a prototype chord combo system. Designed a procedural music system by utilizing Markov chains to emulate music theory as well as be user responsive. Added end user features such as key signature selection through key input.

STUDENT ORGANIZATIONS

General & Service Team Member
University of Illinois Black Chorus, University of Illinois

1/2015 – 5/2017 General Member Responsibilities: Served as a member of the University of Illinois Black Chorus bass section. Assisted individuals with learning music through oral tradition. Volunteered at university ceremonies.

1/2017 – 5/2017 Service Team Responsibilities: Managed all technical aspects of the biennial symposium conference as Technology Manager. Assisted patrons with audio and visual display. Live transcribed lyrics for attendees. Coordinated a 6-person infrastructure team to assist with stage preparation.

VOLUNTEER & COMMUNITY INVOLVEMENT

9/2014 – 5/2015 **3C Fire Marshal**
Allen Hall Safety Coordinator Committee, Allen Hall, Urbana, IL

Responsibilities: Took part in prototype committee dedicated to hall safety. Planned two educational general safety activities with other

committee members. Attended seminar regarding fire safety control and management.

1/2014 – 8/2014 **Opening Program Committee Chair**
Allen Hall Orientation Committee, Allen Hall, Urbana, IL

Responsibilities: Directed, wrote, and edited the orientation video for incoming freshmen. Oversaw a team of 10 volunteers for rehearsing and filming under a time constraint of one month. Organized and executed four informative presentations on different aspects of campus life with Microsoft PowerPoint. Provided tours of campus and the dorm to help familiarize freshmen. Acted as a substitute member in other committees when short on staff.

SELECTED COURSEWORK

Quantum Physics I	Calculus III	Interactive Comp. Graphics
Electromagnetic Fields I	Introduction to Differential Eqs.	Web Tech. and Techniques
Modern Experimental Physics	Applied Linear Algebra	Numerical Methods
Relativity and Math Applications	Statistics and Probability I	Data Structures

SKILLS

Programming	**Java, C#, C++, Python, R, JavaScript, HTML & CSS, Pascal, LaTeX, LabVIEW**
Professional Software	**Unity, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Eclipse, Brackets, OriginLab**
Creative Software	**Pro Tools, Audacity, Finale, Inkscape**
Revision Control	**Subversion, GitHub**
Operating Systems	**Windows, Mac OS, Linux**