

Niall Williams
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Education

- **Davidson College** Davidson, NC
B.S. with Honors in Computer Science Expected May 2019
 - Honors Thesis Topic: *Estimation of Rotation Gain Thresholds for Redirected Walking Considering FOV, Distractors, Gender, and Simulator Sickness*
 - Major GPA: 3.757; Overall GPA: 3.472

Research Experience

- **Davidson College Mathematics and Computer Science Department** Davidson, NC
Undergraduate Research Fellow May 2018 - July 2018
 - Researched perceptual detection threshold gains for rotation with redirected walking in virtual reality.
 - Designed and programmed a full user-study using Unity3D.
 - Ran participants to collect data on imperceptibility of virtual rotation magnitude.
 - Submitted a journal publication to the IEEE VR 2019 conference.
 - Presented research results at Davidson College Math & Computer Science Coffee talk.
 - Presented poster summarizing research at the Davidson College 2018 Summer Research Symposium.
- **Davidson College Mathematics and Computer Science Department** Davidson, NC
Independent Study Research Aug 2018 - Present
 - Investigated the viability of a confidence signal detection model that uses confidence probability judgments to help yield more efficient psychometric function fits.
 - Implemented the novel confidence signal detection model described in a publication and applied it to data gathered from a study I conducted previously.

Publications Under Review

- N. Williams, T. Peck, Estimation of Rotation Gain Thresholds for Redirected Walking Considering FOV, Distractors, Simulator Sickness, and Gender, submitted, *IEEE Transactions on Visualization and Computer Graphics*.

Teaching Experience

- **Davidson College Center for Teaching & Learning** Davidson, NC
Computer Science Tutor Aug 2018 - Present

- Assist peers in learning new programming languages, troubleshooting coding issues and understanding introductory course-related concepts.
- Guide peers toward developing an independent thinking style through open-ended questions.
- Courses tutored: Programming and Problem Solving, Discrete Structures, Data Structures, Computer Organization, Bioinformatics Programming.

- **Davidson College Math & Computer Science Department**

Davidson, NC

- *Computer Science Grader*

Aug 2017 - Present

- Grade and provide feedback on assignments for 20–40 students per semester.
- Feedback includes how to improve code efficiency, debugging, optimization, implementations of different data structures, and cleanliness.
- Wrote a script for the department to grade a new homework assignment.
- Course graded: Data Structures.

Relevant Coursework

- *Computer Science*: Data Structures, Computer Organization, Data Visualization, Programming Languages, Machine Learning, Analysis of Algorithms (in progress), Computer Graphics (in progress), Operating Systems (in progress)
- *Mathematics*: Linear Algebra, Discrete Structures, Calculus III
- *Independent Study*: Quantitative Analysis Using Psychometric Curves and Confidence Probability (in progress)

Leadership & Additional Experience

- **Davidson College ACM Chapter**

Davidson, NC

- *Co-founder and member*

Aug 2018 - Present

- Helped found and establish the Davidson College ACM Chapter.
- Organize events to help prepare peers for graduate school and industry careers.
- Facilitate academic discussion on computing and expose students to industry news.

- **Davidson College Hackathon Group**

Davidson, NC

- *Member*

Aug 2018 - Present

- Compete in coding competitions locally and nationally.
- Learn new technology as necessary for competitions.
- Conduct workshops to introduce students to relevant tools for coding competitions.
- Competed in competitions independently since 2016.

- **Davidson College Davidson Electronic Sports Union**

Davidson, NC

- *Co-President and webmaster*

Aug 2015 - Present

- Organize and host tournaments for various competitive video games.
- Built and maintain club website to improve the club's organization, accessibility for new members, and player rankings.
- Helped the college design a public recreational video gaming room.

- **Davidson College Technology & Innovation (User Success Team)**
Student Technician

Davidson, NC
Aug 2015 - Present

- Troubleshoot technical issues with clients on campus.
- Assist professors with technical emergencies in class.
- Maintain hardware and equipment in computer labs across campus.
- Train new Student Consultants.

Professional Societies

- Davidson College Bernard Society of Mathematics
 - The Bernard Society of Mathematics aims to facilitate student research and participation at conferences, encourage student participation in competitions of regional, national, and international scope, and promote interest and activity in mathematics.
 - Invited to serve as the senior class representative for the 2018 Bernard Lecture and banquet (lecture delivered by Dr. Ken Ono).
- Davidson College ACM Chapter
- Mathematical Association of America student member
- American Statistical Association (ASA) student member

Awards

- Computing Research Association Outstanding Undergraduate Researcher Award nominee.
 - Nominated by the Davidson College Mathematics & Computer Science department.

Programming Skills

- *Languages:* Java, C#, C/C++, Python, R, HTML/CSS/JavaScript
- *Software Packages and Tools:* Unity3D, D3, L^AT_EX, git