

To Whom This May Concern,

It gives me great pleasure to write this letter of support for Mr. Dominic Nicholson, a recent graduate of Sonoma State University with a degree in Computer Science. I got to know Dominic in Fall 2012 when he took Programming I (CS 115), our first required course in Computer Science. He kept in contact with me since then and, in his last semester at SSU (Spring 2016), he took Senior Research Project (CS 496) with me. This course is only open to a select few students distinguished by their ability to research independently and develop complex software. As a part of CS 496, I supervised and mentored Dominic directly; since the course’s inception in 2007, I have accepted only half a dozen students to work with me in this capacity.

When Dominic took CS 115, it was immediately clear to me clear that his trajectory through our departmental program would be one that only a small percentage of our students follow. Even though the attrition rate of CS 115 was around 40%, I felt that Dominic wasn't being challenged – he demonstrated a remarkable ability to learn and deal with complex topics. And yet, he approached problems with an unbridled enthusiasm and a ready attitude. Dominic collaborated well with a diverse group of students and excited and challenged his peers with deep intellectual insights. He excelled in other departmental courses, and based on the recommendation of his other CS professors, he presented a semester-long project at our colloquium. This colloquium is a venue for which we select a few students to showcase their outstanding work. Dominic’s presentation shone even amongst the student colloquium presenters: he received a Departmental Distinction, as he was able to convey the uniquely complex theoretical and practical aspects of his project with ease. His presentation generated a palpable enthusiasm among attendees and inspired his fellow students to follow in his footsteps.

After Dominic's talk, I approached him and presented him with a number of project ideas. Knowing his considerable insight into algorithm design, I knew he was the right person for the project I had in mind. As a department chair, I was interested in developing a collection of interactive data visualization tools to track the progress of students in our program and to identify the bottlenecks that students experience as they plan their path to graduation. The platform for these projects was going to be based on Data-Driven Documents, D3js (https://d3js.org); a set of tools for developing interactive graphics that form the building block on which complex algorithms reside. At the end, he exceeded my expectations for the project and solved a variety of different problems – I will enumerate his many positive attributes.

Dominic demonstrates a ready ability to learn by understanding and deconstructing multifaceted research problems that he could then develop target-specific software to address. Dominic learned the basics of D3js as he developed an interactive pie chart-like application that illustrated the number of seats in courses across all schools within the University available to students during the course of registration. As a result of Dominic’s efforts, administrators can monitor the number of seats that are left at the school-level, department-level, and course-level. Before, administrators would wade through long spreadsheets to gain insight into the pattern with which students enroll in courses during registration.

Dominic displayed an unwavering initiative to dig deeply into problems without my expressed instruction. Indeed, he developed an application to track the paths of Computer Science students as they progressed from course to course. In the process of developing this application, he demonstrated his ability to learn and apply complex D3js building blocks and applied sophisticated algorithms, providing a range of options for users to view subsets of data interactively. In yet another project, he provided a generalized mechanism to create line graphs by use of menu choices and a language processor that the user would define on the fly. These applications are much more complex than anything that has been published on D3js.org. Dominic did a masterful job in designing and implementing these projects. It took his knowledge of compiler construction, algorithm design, and D3js to build a system that can be used to gain insight into large data sets pertaining to course selection and preference.

In conclusion, I highly recommend Mr. Dominic Nicholson for a position that is challenging and requires the depth and the breadth of computer science topics. He is able to work under pressure and with diverse groups of individuals. He is capable, creative, and passionate. Finally, he fits right in with a successful group of people who are tasked to accomplish demanding goals.

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