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Teaching Statement

Background: I have spent most of my adult life teaching, striving to inspire people to embrace technology in all aspects of their lives. My former teachers guided me down the teaching path from a very early age. They nurtured my passion for discovering new things and sharing them with the people around me. They knew I was going to be a teacher before I knew it. I always cultivated my passion for teaching and worked hard to enhance it. I am now finishing my PhD and I am looking forward to returning to a teaching career.

Teaching is the passion and calling of my life. My case rests on a set of three related unusual circumstances. First, after teaching for fourteen years as a Lecturer, I lost my job as a result of the dissolution of the Computer Science program at Emmanuel College (EC). I decided to turn this unexpected challenge into an opportunity by pursuing a PhD degree. Secondly, even though it was not a requirement of my job and I had no real chance of advancement in the academia, I nevertheless pursued a scholarly career anchored in the research of the pedagogical and social impact of technology in the liberal arts. I have several papers and presentations at national and international conferences to show my clear success. The third reason is cultural and personal: I was raised in Communist Romania and understand struggle and hardship. Throughout my teaching career I have not only personally contributed to the advancement of science and technology, but I was also able to inspire many of my students to do the same. I especially worked to inspire women and young people from underprivileged backgrounds, who were struggling with their own hardships.

In summary, I am a woman with a talent and love for teaching and research, who is determined to increase her breadth of knowledge and make even more significant contributions to the STEM field in the future.

Teaching Philosophy: I developed my identity as a teacher through 16 years of educating and inspiring people to embrace science and technology. My background, education and life experiences have given me a unique perspective and connection with students, faculty and researchers and allowed me to use it to the benefit of my students. I approach teaching as the best opportunity to fulfill three main objectives:
(1) to share knowledge, both by teaching and learning from students;
(2) to train and mentor students to become leaders;
(3) to mentor and inspire students to promote excellence throughout their lives and careers.

I address my first objective by constantly increasing the breadth of my knowledge and expertise, while keeping an open mind to new ideas and scientific discoveries. I am both a teacher and a student in my classes. I think of my students as tomorrow's leaders and inventors, people whose valuable perspectives are worth nurturing and sharing. I strive to help them develop research, critical and analytical skills, and the ability to find solutions to existing problems.

For the second objective, I believe that leadership emerges from technical expertise combined with the ability to communicate and realize a vision. In an increasingly

data-driven world, these skills enable students to address emerging challenges both technical and social. This belief permeates my interactions with students. I encourage students to master core concepts, then provide them with opportunities to apply those to problems relevant to their interests. Similarly, in research, I support students in making scholarly contributions, and create opportunities for them to become involved in the organizational and social development of the community.

My third goal is my life-long pursuit of helping students discover themselves, by fostering an atmosphere of understanding and acceptance, while developing the skills to provide constructive critique. I consider "critique" to be a core technique to teaching and a means to foster excellence. Effective critique is to give clear, considered, constructive feedback and it requires the ability to articulate what works and what does not work about a solution. A good teacher has to be able to give actionable suggestions for improvement, not just a list of criticisms. Learning how to give and receive effective critique is a fundamental part of my life and education. Throughout my career as a teacher I have also worked intently on developing the critical skills that are essential in research. I continuously worked on improving these skills in my students at EC, as well as during my time at WPI as a PhD student. I have put these skills to regular use in my peer review of publications, in participating in leadership and professional development workshops.

Since I graduated college, I was dedicated to working in the STEM field. I am highly motivated to inspire women and underprivileged people to embrace it and to see it as a viable path in their lives and careers.

Teaching Experience: I was hired as an assistant professor upon finishing my degree at the University of Craiova, where I taught a variety of courses including programming, robotics, algorithms and foundations of computer science. After immigrating to this country, I resumed my teaching career and I became part of the faculty at Emmanuel College for fourteen years. During this time I designed and taught many courses in the areas of networking, databases, operating systems, as well as introductory courses to computer science, social issues in computing and management of information systems.

My most defining teaching experience is related to my years at Emmanuel College. When I arrived there, the only course offerings were introductory courses teaching basic productivity software and management of information systems. I took a leadership role in setting up a rigorous program in Information Technology leading to a minor in IT and several individualized majors. I designed three courses for the undergraduate division and two courses for the graduate studies. I taught these courses with dedication and enthusiasm, majorly contributing to the expansion of the computer science education at EC. I employed a mix of tools to engage my students in their own rigorous education. My teaching focused on incorporating both state-of-the-art techniques and hands-on experiences in the teaching process. With knowledge in the field evolving so quickly, I believed then as I do now, that the ultimate goal of teaching should be more than simply conveying information; it should be "preparing students for jobs that don't yet exist, using technologies that haven't been invented, in order to solve problems that we don't even know are problems yet".

To this end I developed a toolbox of analogies for explaining computing concepts to my students in terms with which they are familiar. To ensure that students were familiar with the topics discussed, I developed diverse assignments ranging from practical experiments to service learning experiences, where students had to use their computer skills to help organizations serving the disadvantaged communities in the Greater Boston area. Finally, to allow students to take a leadership role, I created flexible assignments that encouraged them to apply learned techniques to devise solutions to existing societal problems.

During my PhD studies at WPI I continued my teaching work as a TA for courses including algorithms, foundations of computer science, databases and social issues in computing. I had the opportunity to teach smaller groups of students, help them better grasp concepts and apply them in their assignments and projects.

I am very enthusiastic and passionate about science and technology. While the intellectual merit of my work in education was to educate students in computer science and inspire them to develop an interest in science and technology, the broader impact of my work is anchored in enabling them to understand, get engaged with and use technology as a powerful tool to build a better future.

Advising and Mentorship:

During my years at Emmanuel College I was the adviser of most of the students minoring in Information Technology and of all of the students completing Individualized Majors in IT. My door was always open to all students taking any of my classes. I can summarize my advising and mentorship principles in the following three core ideas:

(1) Foster passion and creativity by giving enough freedom for exploration.

I believe that an important way to foster passion and creativity is to encourage students to work on projects in which they are really interested and invested. The research projects we designed together included enough flexibility for students to discover and explore on their own, while focusing on research directions that were important and exciting enough to boost their passion. Having the students working on topics that they are truly excited about makes the journey worthwhile and turns it into a rewarding experience for the student. Students are more likely to innovate and feel proud of these projects.

(2) Share my knowledge and learn along with my students.

Few people can learn the skills of research without trail and error. While I share my knowledge about the project and my previous related experience, I encourage them to become acquainted with existing solutions by reading research papers and then devising solutions of their own. Proper guidance can help students avoid some mistakes in research and manage the risks of failure in the project. I always encourage students to discuss their work with other students and researchers in order to learn from their experience. Moreover, I believe that learning with and from my students is an important part of the collaborative research.

(3) Be my students' best ally on the road of research exploration.

The road of teaching, learning and research exploration often includes failure, stress, despair, frustration and helplessness for students. I always try to give them strong

support and encouragement along the way. Whenever any of my students met with personal or professional setbacks, I tried my best to enable them to overcome these difficulties and to turn them into positive experiences. Many of the undergraduate students that I advised at EC are now pursuing graduate studies or are applying to graduate programs. I am proud to continue to help them figure out the best paths to pursue, despite the fact that I am no longer formally their adviser.

As I continue to be a determined contributor to the advancement of technology, my role switched in the past two and a half years from teacher to student. My passion for advising and mentoring did not change at all. Immediately upon starting my graduate coursework, I worked with a group of eleven graduate and undergraduate students on a project poised to create an analytic platform to offer dynamic modeling capabilities and to help users better understand public data. After a very short time, I emerged as the leader and mentor of the group, due to my previous experience and expertise. In this context, I worked with this diverse group of students to create an application that targets data mining, analytics and modeling with the goal of finding hidden correlations and associations in historical data from heterogeneous sources, in order to ultimately answer sophisticated economic, social and educational inquiries. During my studies at WPI, I continuously worked with various groups of graduate and undergraduate students as part of their Interactive Qualitative Projects (Junior thesis) and Major Qualifying Projects (Senior thesis), guiding them through the research, design and implementation of systems for advancing social sciences.

Community Outreach and Diversity:

While at Emmanuel College, I was not just dedicated to my students and their education, but to the academic community as well. I served consistently in college-wide committees ranging from writing policy and procedure for the Faculty Handbook, to sub-committees of the Faculty Senate, such as the Faculty Affairs committee. I served as the chair of Faculty Affairs for two years and initiated several faculty initiatives, including a new family leave policy, a new faculty ranking system, and other academic policies and procedures. I continued this tradition by serving as the graduate student representative in college-wide committees at WPI, including the Denise Nicolleti Award for community service and the Student Training And Readiness Sessions (STARS).

I believe in hard work, dedication and connecting with people, inspiring, educating and guiding them. In that spirit, while teaching at EC I designed a service learning course in which my students volunteered their time, experience and hands-on technical skills to give back to society by helping organizations like Julie's Family Planning, the Notre-Dame Education Center and The ABCD Parker Hill Neighborhood in Boston.

While teaching at EC, I pride myself on having been part of a program designed to help students coming from diverse and disadvantaged backgrounds succeed (Road to Intelectual Success in Education). I was chosen by many of those students to be their adviser and mentor in their quest for a better life and education.

Throughout my life and career, I showed my strong commitment to increasing di-

versity by participating in many outreach events for underrepresented populations in STEM. For many years I taught introductory courses and tutorials at the public library in the town where I leave, trying to empower women, seniors, immigrants and anyone who needed basic computer skills to survive in an increasingly computerized society. I collaborated with and gave talks at the Boston Showa Institute for girls, striving to empower women to get better lives and careers through technology. I am an active participant in multi-cultural graduate and undergraduate organizations and events at WPI, sharing my commitment to diversity and inclusion. I have also made diversity a part of my research agenda; I participated in workshops and published papers promoting diversity and inclusive teaching.

Curriculum Development:

During my career at EC, as part of my vision to expand the curricular offerings, I designed several courses to include networking principles, database administration, project management, web development, social implications of technology and other applications of computer science in the context of a liberal arts education. I was one of the pioneers at EC to design online and blended courses. I helped establish an online summer school to retain and attract new students willing to enrich and advance their education. I was the coordinator of the Computer Literacy program and assisted several departments in implementing technology in their own disciplines.

In summary, I am committed to the teaching profession in its entirety. I will continue to develop excellence in my students in helping them to master content, research and leadership skills, as well as a passion for a life that includes science and technology as an essential component to success.