Alex M. Maldonado, Ph.D.
Assistant Teaching Professor
Department of Biological Sciences
Dietrich School of Arts and Sciences

4249 Fifth Avenue
Pittsburgh, PA 15260
alex.maldonado@pitt.edu
biology.pitt.edu

[MONTH] [DAY], [YEAR]

Dear Graduate Admissions Committee,

I am writing to give my absolute highest and unreserved recommendation for [STUDENT] for admission to your [PROGRAM] at [INSTITUTION].

I have known [STUDENT] since [SEMESTER], first as a standout student in my Computational Biology course, then as my Undergraduate Teaching Assistant (UTA). I serve as the primary instructor for the university's core computational biology curriculum, instructing over 150 students annually from foundational biochemistry through senior capstones. In parallel, I develop open-source software and deep learning models for molecular simulation and drug discovery. This dual role of educator and computational researcher provides me with a rigorous technical benchmark for evaluating graduate-level potential. [STUDENT] is, without hesitation, the most driven and insightful student I have taught.

[STUDENT] is precisely the type of student who thrives in a rigorous [GRADUATE FIELD] research environment: technically brilliant, self-driven, and algorithmically fluent. [STUDENT] first demonstrated [STUDENT] excellence in my BIOSC 1540 course, an exceptionally rigorous class that covers graduate-level theory in bioinformatics and computational structural biology. In a class of 75, [STUDENT] consistently ranked at the top. However, [STUDENT] excellence is driven by a deep intellectual curiosity that extends well beyond the classroom.

To challenge my top students, I offer "Programming+" assignments that go beyond the required material. [STUDENT] was one of only three students in the past two years who not only worked eagerly on them but also actively sought ways to optimize implementations of complex algorithms, such as the FM-index and Chou-Fasman algorithms. [STUDENT] technical skill is best exemplified by an extra-curricular challenge I issue to my students: to beat me in the "Advent of Code," a series of notoriously difficult daily programming puzzles. To give students a fair chance, I handicapped myself by using Rust, a language new to me. [STUDENT] was [POSITIVE PRAISE], demonstrating top-tier problem-solving speed and algorithmic intuition.

[STUDENT] consistent pattern of high-level research further confirms [STUDENT]'s potential. My most direct insight comes from informal mentoring [STUDENT]'s independent project on multilingual reasoning in LLMs. [STUDENT] frequently uses my whiteboard to map out [STUDENT] experimental designs and future aims. In these sessions, I actively probe [STUDENT] knowledge, and [STUDENT] technical understanding of the challenges consistently matches that of a graduate student. [STUDENT] initiative is unheard of for an undergraduate; [STUDENT] does not wait for instruction, [STUDENT] proposes solutions.

Given [STUDENT] advanced expertise, I am designing a custom, graduate-level project for [STUDENT] [SEMESTER] coursework, where [STUDENT] will develop a novel [NOVEL PROTEIN

FOLDING ARCHITECTURE]. This project requires a deep understanding of the very architectures central to modern NLP. [STUDENT] has already demonstrated the skills, independence, and intellectual curiosity necessary to execute this high-level research successfully.

As my UTA, [STUDENT] passion for teaching is remarkable. During exam reviews, I observed [STUDENT] designing [STUDENT] own interactive examples, creating a collaborative atmosphere where [STUDENT] authentic excitement for the material was contagious. [STUDENT] channels this passion into true leadership. After completing the Programming+ challenges, [STUDENT] approached me about developing structured computational training for biology majors. With my guidance, [STUDENT] designed and implemented [PROJECT NAME], a series of programming modules that enhance student engagement with computational concepts. This is not just a UTA project; it is a sophisticated and scalable contribution to STEM education that I will continue to use in my courses. For example, [STUDENT] [PROJECT NAME] on [BIOINFORMATICS ALGORITHM] using a narrative of [FICTITIOUS ANIMAL]. This work, which earned [STUDENT] the [PRESTIGIOUS AWARD], is tangible proof of [STUDENT] commitment to democratizing computational knowledge.

What makes [STUDENT]'s commitment so compelling is [STUDENT] deep authenticity. In our numerous discussions, it is clear that this passion is deeply rooted in [STUDENT] personal journey with language as a means of community and cultural connection. This core motivation underpins [STUDENT] professional identity: [STUDENT] views [STUDENT] research in language technologies as a means to make systems more equitable, and [STUDENT] sees [STUDENT] teaching as a method to empower others to join that mission.

If [STUDENT] has a challenge to overcome, it is that [STUDENT] intellectual voracity can sometimes lead [STUDENT] to overscope [STUDENT] inquiries at first. Early in our interactions, [STUDENT] would propose projects that were feasible for a doctoral thesis but overly ambitious for a semester-long project. However, unlike many undergraduates who crumble under such a scope, [STUDENT] has actively worked to refine [STUDENT] scientific pragmatism. [STUDENT] is learning to distinguish between *optimal* and *executable*.

I am thrilled to watch [STUDENT] career unfold, as [STUDENT] success is not a question of *if* but *when*. [STUDENT] is fully prepared to enter your program and make immediate, significant contributions. I recommend [STUDENT] with the highest degree of confidence.

With the highest regards,

[SIGNATURE]