

I am a co-term student at Stanford studying systems and artificial intelligence for my bachelor's and master's, respectively. I am really passionate about the intersection of machine learning and healthcare and am excited to join the OpenAI Forum to discuss the future of AGI in the field of healthcare from medical diagnosis to drug development to personalized medicine. I am particularly interested in learning more about the ethical, regulatory, and security considerations when deploying models in healthcare and how to overcome the problem of limited, low-quality medical data needed to train these ML models.

I have taken significant coursework in biology and chemistry and have conducted nanoparticle research with Dr. Airan and epidemiology research with Dr. King. I have worked in the Stanford Healthcare Consulting Group and co-founded the undergraduate committee for Stanford Biotechnology Group. I participated in the HealthHacks hackathon, where my group and I tackled expediting the insurance claims appeal process within the healthcare system, addressing a significant productivity drain. I have worked at a digital health startup to prototype a digital tool for caregivers of cancer patients. This past summer, I fine-tuned an LLM for atomistic simulations to expedite small drug and material discovery. Currently, I am conducting a research project on different classifier methods for diabetes classification on traditional datasets augmented with wearable health data.

As described in the main application, I have taken significant coursework in biology and chemistry and have conducted nanoparticle and epidemiology research. CS 522 illuminated the vast applications of artificial intelligence in healthcare, covering topics from cancer screening to medical devices, healthcare data analytics, ethics, and wearable technology. Additionally, participating in Stanford Healthcare Consulting introduced me to diverse challenges within the healthcare system, beyond patient diagnosis and treatment. I discovered the potential of technology in disease prevention, improving patient outcomes, and streamlining hospital operations. I also worked with a startup to prototype a digital tool for caregivers of cancer patients, which got me interested in digital health. While I enjoyed my pre-med courses, my passion for computer science continued to overshadow my enthusiasm for traditional medical studies. The turning point came during HealthHacks, where my group and I tackled expediting the insurance claims appeal process within the healthcare system, addressing a significant productivity drain (my friend has turned this into a startup now). This past summer, my chemistry knowledge proved invaluable as I contributed to a material innovation project, fine-tuning an LLM for atomistic simulations to expedite small drug

**and materials discovery. I am currently taking machine learning and am exploring classifier methods like XGBoost on traditional datasets augmented with wearable health data to develop an ensemble classifier for diabetes. I am really interested in exploring the applications of machine learning in healthcare for my tutorial and want to write my Honors thesis on this topic as my senior project.**

**How have you prepared yourself academically for this program? How does the program contribute to your broader educational goals at Stanford?**

As a CS cotermin student focusing on artificial intelligence and biocomputation for my bachelor's and master's degrees, I've undertaken a diverse range of technical courses, including Machine Learning (CS 229), Web Applications (CS 142), Design and Analysis of Algorithms (CS 161), Operating Systems (CS 111), Reinforcement Learning (CS 238), and Computer Networking (CS 144). I plan to take Natural Language Processing (CS 224N) and Computer Vision (CS 231N).

In my first two years, I pursued a premed track, engaging in extensive coursework in biology and chemistry. I also contributed to healthcare projects and conducted research in epidemiology with Dr. King and nanoparticles with Dr. Airan. Relevant courses encompass Chemical Principles of Life (CHEM 141), Genetics (BIO 82), Physiology (BIO 84), Biochemistry (BIO 83), Medical Shadowing (MED 160), Stanford Healthcare Consulting Group (MED 279), and Healthcare Leadership (EMED 127).

Courses like Artificial Intelligence in Healthcare (CS 522) and Philosophy of AI (PHIL 20N) revealed the ethical and practical concerns with deploying medical models in practice. This intersection has become a profound focus, motivating my desire to dedicate time to it through an Oxford tutorial. I plan to elevate this passion by undertaking Honor's and crafting a thesis on this tutorial topic as part of my senior project.

Other courses that inspired me to study abroad include Great Minds of the Italian Renaissance (ITALIAN 140) and Gender and Media (FEMGEN 106Q). I plan to take ENGLISH 66 in the spring.

Please describe a research topic in-depth that you are passionate about. This is not a binding proposal to take a tutorial in this topic, however the expectation is that your tutorial will be related to your research passion. Students who have been accepted, or accepted onto the waitlist, will propose their tutorial topic in greater detail when they complete the participation requirements next quarter.

You may include reference to mentors, professors, and previous course work that contributed to your interest in this topic. You may also explain how researching in this field will further your longer term academic goals, such as in future projects or graduate work.

Becoming part of this venerable institution is not just an academic pursuit; it is an immersion into a tradition that spans centuries, a tradition dedicated to the relentless pursuit of knowledge. As a student, I would contribute to and perpetuate this legacy, becoming part of something far larger than myself. This sense of continuity, of being part of an academic lineage of thinkers like Sir Tim Berners-Lee that has withstood the test of time, is profoundly special. This contrasts with Stanford, renowned for its forward-thinking and entrepreneurial spirit. Oxford offers me an opportunity to step back in time and better understand the evolution of knowledge from historical legacies to cutting-edge advancements like my tutorial topic.

In the realm of professional development, studying the intersection of machine learning and healthcare for my tutorial will allow me to specialize and develop expertise in the applications of computer science that I am truly interested in.

Being part of an international university like Oxford will allow me to interact with peers from around the world and foster a wonderful exchange of ideas that will not only enrich my academic experience, but also provide me with a broader view of the world, especially since I haven't ventured much outside of California in my life. In addition, engaging with a global community broadens my understanding of user needs, preferences, and cultural nuances, enabling me to design more inclusive and universally applicable technological solutions in the future.

A concern that I have is getting used to a new environment and feeling homesick since I haven't traveled outside the US on my own. I plan on setting up a time to talk with my family just as I do now and getting in touch with my relatives in the UK. It would be really cool to visit them while I am there and I would know that I have some support system there as well.

As a CS cotermin student studying artificial intelligence and biocomputation for my bachelor's and master's, respectively, I have taken a breadth of technical courses that have prepared me for the rigor of computer science at Oxford. These courses include Machine Learning (CS 229), Web Applications (CS 142), Design and Analysis of Algorithms (CS 161), Operating Systems (CS 111), Reinforcement Learning (CS 238), and Computer Networking (CS 144). I plan to take Natural Language Processing (CS 224N) and Computer Vision (CS 231N).

Additionally, I was premed for the first two years of college. Therefore, I have taken extensive coursework in biology and chemistry, worked on enriching healthcare projects, and conducted research in epidemiology with Dr. King and nanoparticles with Dr. Airan. I have taken Chemical Principles of Life (CHEM 141), Genetics (BIO 82), Physiology (BIO 84), Biochemistry (BIO 83), Medical Shadowing (MED 160), Stanford Healthcare Consulting Group (MED 279), and Healthcare Leadership (EMED 127).

Artificial Intelligence in Healthcare (CS 522) and Philosophy of AI (PHIL 20N) illuminated the potential of technology in disease prevention, improving patient outcomes, and streamlining hospital operations and the ethical and practical concerns with deploying models in practice.

I am really passionate about the intersection of machine learning and healthcare and genuinely just want to have time to purely dedicate myself to this topic through a tutorial. In addition, I plan to take Honor's and write a thesis on this tutorial topic as part of my senior project.

Other influential courses that inspired me to study abroad: Great Minds of the Italian Renaissance (ITALIAN 140) and Gender and Media (FEMGEN 106Q).

I plan to take ENGLISH 66 in the spring.

My academic journey expanded with courses like CS 522, which illuminated the vast applications of artificial intelligence in healthcare, covering topics from cancer screening to medical devices, healthcare data analytics, ethics, and wearable technology. Additionally, participating in Stanford Healthcare Consulting introduced me to diverse challenges within the healthcare system, beyond patient diagnosis and treatment. I discovered the potential of technology in disease prevention, improving patient outcomes, and streamlining hospital operations. Computer science evolved from a cool subject into a powerful tool to address the problems I am passionate about.

Despite having to leave early due to family circumstances, I seized the opportunity to work with Manta Cares, which involved prototyping a digital tool for caregivers of cancer patients, offering insight into their experiences and needs.

While still pre-med at this point, this experience sparked contemplation about the broader impact I wanted my work to have.

The turning point came during HealthHacks, where my group and I tackled expediting the insurance claims appeal process within the healthcare system, addressing a significant productivity drain. Witnessing my group member, and now close friend, turn this idea into a startup crystallized my realization that impactful work in technology was my true calling. It was what truly excites me!

This experience instilled in me a scrappy entrepreneurial mindset, further cultivated by co-founding the undergraduate committee at Stanford Biotechnology Group, focused on promoting interest in biotechnology and HealthTech among undergraduates.

This summer, my chemistry knowledge proved invaluable as I contributed to a material innovation project, fine-tuning an LLM for atomistic simulations to expedite small drug and materials discovery. I also collaborated with a Ph.D. intern on creating a structure generation class for the same client's software. The experience spurred me to undertake a side project—developing my own GPT-like project for startups, using Crunchbase data. This practical experience, combined with my CS background, has fueled my motivation to pursue more advanced courses in artificial intelligence and systems.

My application to this cotermin program is rooted in my eagerness to delve into captivating CS classes, build a robust foundation in biocomputation, artificial intelligence, and systems, and apply this knowledge to address issues I deeply care about. Looking ahead, I aspire to contribute to the HealthTech space, potentially by establishing a startup.

. and Given my interest in exploring the intersection of machine learning and healthcare for my tutorial, I have ta

I started my academic journey as an aspiring doctor, taking significant coursework in biology and chemistry, along with conducting nanoparticle research and epidemiology research and working on interesting healthcare projects. My journey expanded with courses like CS 522,

which illuminated the vast applications of artificial intelligence in healthcare, covering topics from cancer screening to medical devices, healthcare data analytics, ethics, and wearable technology. Additionally, participating in Stanford Healthcare Consulting introduced me to diverse challenges within the healthcare system, beyond patient diagnosis and treatment. I discovered the potential of technology in disease prevention, improving patient outcomes, and streamlining hospital operations. Computer science evolved from a cool subject into a powerful tool to address the problems I am passionate about.

Transitioning towards computer science, I recognized the immense potential of leveraging technology to address healthcare challenges. As an Undergraduate Committee Member in the Stanford Biotechnology Group, I co-founded a committee to promote interest in biotechnology entrepreneurship, organizing events that facilitated conversations between computer science experts and biotech professionals. This dynamic exposure solidified my conviction that technological innovation is pivotal in advancing healthcare solutions.

My ongoing CS 229 project, "Diabetes Classification Methods," epitomizes this dual interest. Applying advanced machine learning techniques to healthcare, I explore classifier methods using Python and Google Cloud, merging my computer science expertise with a commitment to improving medical diagnostics. This interdisciplinary approach, combining my premed foundation with computer science, positions me uniquely to contribute meaningfully to the evolving landscape of healthcare technology.

A key milestone in this journey was the development of AuthIQ during the HealthHacks Hackathon. This initiative, born from the intersection of computer science and healthcare, evolved into FigGPT, securing \$100K in funding. This success underscores my ability to navigate and contribute to the dynamic realms of both technology and healthcare, demonstrating the symbiotic relationship between the two.

My role as a UX/UI Intern at Manta Cares further allowed me to bridge my initial interest in patient care with the design of digital tools for caregivers. This fusion of empathy-driven design and technical acumen has become a hallmark of my approach to addressing healthcare challenges.

In proposing a tutorial under the machine learning department at Oxford, I seek to intertwine my dual interests by delving into advanced machine learning techniques applied to medical data. This tutorial aims not only to explore the technical aspects but also to emphasize the human-centric approach required in healthcare technology. By drawing on my premed background and current computer science expertise, I aim to foster a comprehensive understanding of the transformative potential that AI holds in addressing healthcare challenges, blending the precision of algorithms with the compassion inherent in healthcare.

### **Berlin Essay:**

This article reminded me of an anime I watched called Monster, which made me fascinated with learning the history of Germany and former Czechoslovakia just before and after the communist collapse. The article isn't wrong when it describes how Berlin isn't some aesthetic place to take

pictures, but rather a place to contemplate and learn a lot about the painful history of Berlin. I would be interested in visiting these historical sites and broadening my historical knowledge.

**Florence Essay:**

This article honestly just makes me feel like I would fit right in. I dress pretty modestly as described in the article as that is the cultural norm I grew up with. In addition, since childhood I have been raised to ask for water with no ice and that's just something I am used to now. Finally, no AC is perfect because I don't get hot easily as I am used to 110 degree Fahrenheit summers. Maybe I should just move to Florence?

**Oxford Essay:**

This article has made me contemplate the far-reaching impact of the BBC in politics, economics, and society. While I typically engage with U.S.-centered news outlets such as CNN and The New York Times, the BBC's perceived impartiality offers a distinctive dimension to my information intake. Influenced by my parents, avid consumers of BBC content, I've come to perceive it as less biased but haven't been able to pinpoint exactly why. The idea of dissecting the nuanced differences in rhetorical strategies between the U.S. and the UK media landscapes would be really interesting to me while studying abroad. In addition, the article describes the current state of BBC, with challenges to its historical dominance and the rise of players like Netflix that focus on "hyper-individualized choice." This in a way mirrors the tradition of Oxford and the futurism of Stanford.