Distinction in Artificial Intelligence in Medicine

Description

The Distinction in Artificial Intelligence Program offers a unique opportunity to NJMS medical students to learn about the applications of Machine learning AI in healthcare, engage with AI faculty, and demonstrate AI research skills during their medical school training. As Machine Learning (ML) and Artificial Intelligence (AI) methodologies are rapidly expanding within the healthcare field, this distinction program will provide students with a strong foundation in linking ML and AI to clinical care and research. This will include elements of biomedical informatics and computing tools to support ML/AI in medicine. The program is designed for students who plan a career in Academic Medicine or in fields where ML/AI is integrated into practice. Students with prior experience in statistics, machine learning, programming, and/or artificial intelligence are encouraged to apply.

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Co-Directors:

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Other faculty with training/experience in AI will be added subsequently.

Program Requirements

I) **Didactics/Practicum**

Students are will participate in interactive lectures/seminars and group sessions. A webinar series will be hosted through the Center for Data Science, delivering core artificial intelligence content, including elements of biomedical informatics, methodologies in ML/AI, programming languages and basic coding, critical analysis of data sets, data visualization, and comparing sets of models to answer specific data science questions. The webinar series will help build a foundation of knowledge for students that may not have as robust of a background in ML/AI.

II) **Capstone**

The student will develop an AI research project within the field of artificial intelligence in medicine. Students are expected to submit their project proposal as part of their initial application at the end of Year 1, ideally with an identified research mentor. The co-directors of the distinction program will provide final approval of the project. Students are expected to produce the following by Year 4:

- Written manuscript(s) ready for submission for publication
- Presentation in Year 4 at the Distinction Symposium

Students in Year 4 will enroll in a one-month Independent Study to complete their capstone project.

Timeline

Year 1:

September-April: Webinar Series on the Foundational Concepts of Machine Learning and Artificial Intelligence. Students are encouraged to attend this webinar series if they plan to apply for the Distinction Program. This will provide additional background and foundation in the field to allow an individual to explore the field further.

May: The application and selection process will be conducted. As part of the application, students will need to provide a project proposal and ideally a faculty mentor for the project. The student then can use the summer between Year 1 and 2 to continue to work on the distinction project.

Years 2 and 3:

Students will participate in monthly distinction sessions with topics delivered by student members as well as faculty experienced in AI. Topics will include discussions on application of ML/AI in medicine, including clinical uses and ethical discussions on its use. They will continue to work on their research project.

Year 4:
Students will complete an independent study elective to finalize their capstone/research project and present the final project at the Senior Distinction Symposium in the Spring.