R0083512 2023 PhD Summer Internship - Quantitative Sciences

About the role:

At Takeda, we are committed to lifelong learning.

To that end, Takeda's summer internship program blends real world experience with an extensive overview of the pharmaceutical industry. Knowledgeable mentors will provide guidance as you gain professional hands-on experience to start your career or further develop in your expertise.

The summer internship program is a full-time commitment of 12 weeks in length and offers a unique perspective into a world-class pharmaceutical company. Our internship program also provides you the opportunity to network with people at Takeda through various planned events and activities.

Project Outline:

Title: Machine Learning approaches for the analysis of echocardiography videos

Heart dysfunction is present in individuals affected by lysosomal storage diseases. Echocardiography is an excellent technique for assessing heart function, but it requires robust quantitative processing pipelines to transform large videos into clinically meaningful endpoints.

The Quantitative Sciences group at Takeda is seeking a Summer Intern who will be developing a video processing pipeline that receives ultrasound video data as input, segments the tissues of the heart, and generates features of heart function as output. The successful candidate will:

1) adapt neural network-based methods of video analysis (e.g., DeepLabCut) to echocardiography to achieve segmentation of tissues in the heart during heartbeats;

2) discuss their progress with peers in the Quantitative Sciences group;

3) present their findings to scientists in the Rare Disease Drug Development Unit.

This position will be hybrid.

How you will contribute:

- Deadline-driven with a high level of organizational and planning skills
- Strong analytical, problem-solving, and oral and written communication skills
- Ability to work well in teams, effectively manage projects, and present ideas clearly and concisely.
- Global mindset to grow in a diverse work environment
- Excellent communication and leadership skills
- Proficiency in developing Python/Matlab code for image processing
- Knowledge of convolutional neural networks is highly desirable.
- Knowledge of R for statistical analysis is desirable
- Experience on AWS is a plus

Requirements / Qualifications:

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As stated above, Takeda is committed to lifelong learning opportunities. To that end, our internship program is open to currently enrolled students seeking early experiences and non-traditional candidates interested in making a career change and gaining new experience.

The requirements for these two groups of candidates are specified below:

Candidates currently enrolled at an accredited university:

- Must be authorized to work in the US without sponsorship (i.e., Takeda will not sponsor interns)
- Must be available to work full-time (40 hours/week), within core business hours (8 AM-5 PM), for a minimum of 12 weeks during the summer months
- Minimum GPA 3.0/4.0
- Graduate, PhD, MD student with at least one year of university studies before internship
- Return to university for at least one semester post-internship
- Takeda does not provide student housing or housing stipends

Non-traditional candidates not currently enrolled at university:

- Must be authorized to work in the US without sponsorship (i.e., Takeda will not sponsor interns)
- Must be available to work full-time (40 hours/week), within core business hours (8 AM-5 PM), for a minimum of 12 weeks during the summer months
- Must provide a cover letter explaining why you are seeking this internship, relevant experience that makes you a good candidate, and what you hope to achieve through the experience
- Strong preference for non-traditional candidates with some experience relevant to the desired intern role