Faculty Member Contact Information

Name **Contact Info**	John Matta
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Department	Computer Science

1 Funded, 3 Unfunded URCA Assistant

	This position is **ONLY** open to students who have declared a major in this discipline.	**M**
	This project deals with social justice issues.	💙
	This project deals with sustainability (green) issues.	🌱
X	This project deals with human health and wellness issues.	✚
	This project deals with community outreach.	✋
	This mentor's project is interdisciplinary in nature.	I

Are you willing to work with students from outside of your discipline? If yes, which other disciplines?

No

How many hours per week will your student(s) be required to work in this position?
(Minimum is 6 hours per week; typical is 9)

9

Will it be possible for your student(s) to earn course credit?

CS495 Independent Study 3

Location of research/creative activities:

No location requirements

Brief description of the nature of the research/creative activity?

We are using MRI data to learn about networks in the brain. We will use machine learning techniques to isolate evidence of the "default-mode network," and will further study by using data from the NIH All of Us" dataset. This data will will allow us to verify MRI findings with phenotype data from All of Us.

Brief description of student responsibilities?

Students will be responsible for cleaning and assembling the "All of Us" data, and for using tools provided with the dataset. We will also be cleaning and processing MRI data from a separate database. These activities will involve skills such as Python Programming, R programming, database creation and querying. We will also be writing the results into papers, so that the students will have experience doing technical writing, researching related work, etc.

URCA Assistant positions are designed to provide students with *research or creative activities* experience. As such, there should be measurable, appropriate outcome goals. What exactly should your student(s) have learned by the end of this experience?

Students will learn rules and procedures for doing research involving human medical data.

Students will learn and use Python and R libraries, and will write programs using those languages.

Students will learn about PheWAS studies and computational genetics work.

Students will learn technical research and writing.

<u>**Requirements of Students**</u>

If the position(s) require students to be available at certain times each week (as opposed to them being able to set their own hours) please indicate all required days and times:

Students will be expected to attend one research meeting per week. A time will be chosen that accommodates everyone's schedules. Generally students may set their own hours.

If the location of the research/creative activities involves off campus work, must students provide their own transportation?

No transportation requirements.

Must students have taken any prerequisite classes? Please list classes and preferred grades:

I generally prefer students who have taken CS325 (Software Engineering) and CS340 (Algorithms and Data Structures) and done well in both.

Other requirements or notes to applicants:

No other requirements.