RENAISSANCE

Experiential Learning Program: Data Research Methods

Summer 2023 Session: June 26 – August 18, 2023

Overview

The Data Champions Team at Renaissance is accepting applications to the Renaissance Experiential Learning Program in Data Research Methods, a practicum experience focused on building skill in scientific thinking, data analysis, and computer science principles. Accepted student interns will learn computational data analysis and scientific research fundamentals in the context of an applied, student-driven research study aimed at social good. Over the course of 8 weeks, interns will design, implement, and showcase a data-driven research study on a topic of their choice. During this time, they will gain experience with real-world industry-standard tools, including Python, GitHub, and Jupyter Notebooks.

What You'll Do

Working entirely online, you get to experience what it's like to do real research into some of society's most pressing problems: things like climate change, education, economics, public health, and others. You choose a topic that resonates with you, and professional researchers and data scientists will help you narrow it down and find data that can answer your question. These experts will guide you along the way, helping with statistics, programming, data visualization, and all of the other parts of the process. You'll learn to use the same tools that industry professionals use, so you'll be better prepared when it comes time to apply to jobs later in life. You will join other students from around the country who are learning to use the same skills, and you'll have opportunities to meet Renaissance employees in other roles to help you understand what it takes to get into different fields.

Why Apply?

Students in this selective program will:

- Learn software and research tools used in the real world
- See what career researchers and programmers do day-to-day
- Learn about a variety of career paths by meeting employees in many different roles
- Be part of a community of passionate learners and mission-driven employees, dedicated to bettering our world

The Renaissance Experiential Learning Program is **completely free**, looks great on your **college application** and résumé, and may qualify for **academic credit** at your high school!

Schedule

- The internship runs for 8 weeks, from June 26 to August 18, 2023.
- The time commitment is approximately 20 hours of instruction, practice, and career development each week.
    - Interns will meet with their instructor online for 1 hour each week of instruction and planning.
    - Interns will also be invited to meet with employees across the organization to learn about professions outside of the scope of data science and research.
    - A majority of the time commitment will be dedicated to independent practice and development.
- In addition to the above, interns will present their work at a year-end event with a wide audience including senior leadership at Renaissance and open to interested administrators, faculty, and staff from their school.

Qualifications

Required
- Must be in good academic standing at the time of their application
- Excellent ability in mathematics
- Self-motivated, mature, and possessing good communication skills

Preferred
- Completed coursework in geometry and algebra II
- Has a demonstrated interest in computer science, as shown through academic coursework or personal projects
- Is a rising senior intending to pursue a STEM-related field in college
- Passionate about social issues such as education, environmental protection, human rights, social justice, community development, or others

Frequently cited statistics show that some women, minorities, individuals with disabilities, and protected veterans, may only apply to roles if they meet 100% of the qualifications. At Renaissance, we encourage all applications!

How to Apply

1. Before the deadline of April 21, 2023, interested candidates should submit their application to: Jon.Stelman@renaissance.com.

2. Your application should contain the following:
    a. A résumé containing your name, relevant coursework, and, if applicable, any relevant experience such as projects, a publicly viewable GitHub portfolio, etc.
    b. A statement of interest in the program. The statement should respond to the following question:

    How have you explored your interest in scientific research or data science in the past, and why do you want to continue learning about these fields?"

    Please keep your statement to fewer than 700 words (~2.5 double-spaced pages).

3. Select applicants will be invited for a short video interview, about 20 minutes, where they will be asked about any specific experience in scientific analysis and programming.

4. Letters of acceptance will be emailed by mid-May.

Learning Goals

- Design a viable study which addresses a well-formulated research question
- Implement best practices in programming and statistical analysis
- Utilize industry standard tools to perform analyses, manage code, and document research

Learning Objectives

- Formulate a meaningful and testable research question
- Identify and acquire an open dataset that can be used to investigate this question
- Configure virtual environments running Python 3 and Jupyter Notebook
- Configure git locally, and connect with a personal GitHub or Bitbucket account
- Consistently use version control to manage a research codebase and data pertaining to the study
- Conduct an exploratory analysis of the dataset
- Select data based on quality
- Visualize the data to aid in both research and interpretation
- Programmatically clean and reformat data
- Perform basic statistical analyses of a dataset
- Iterate and adapt the research process according to findings
- Use a statistical programming language such as Python or R to write functions and methods that can load, manipulate, and visualize data
- Present research findings, both as a research paper and as conference-style presentation
- Collaborate with teammates to troubleshoot problems and brainstorm solutions
- Communicate research findings and technical details to audiences of different backgrounds

School Responsibilities

To ensure a successful experience for the student, school, and Renaissance, we ask that schools who put forward any students agree to the following: [†]

1. School acknowledges that the internship is unpaid, and as such the intern's experience is designed as an experiential learning program intended to teach skills required of those entering into STEM-related fields.
2. School agrees that students can earn academic credit for the successful completion of the program.
3. School agrees that the internship timeline is compatible with its academic calendar.
4. School agrees to provide Renaissance a point of contact who can support the student's needs in event of an emergency. This representative may be a teacher, administrator, guidance counselor, or similar, who can liaise with the program coordinator at Renaissance and school's guidance services.
5. School agrees to submit a diverse group of student candidates for consideration.

[†] The enumerated terms are purely descriptive and are not intended as a binding agreement.

Contact Information

Please address all inquiries about the program to Jon Stelman or Justin Alt.

Email: Jon.Stelman@renaissance.com   Email: Justin.Alt@renaissance.com
Phone: (715) 424-3636 ext. 1936   Phone: (715) 424-3636 ext. 4196

About the Coordinator & Mentors

Jon Stelman is a Technical Product Manager in the Data Champions Team at Renaissance Learning, and former data scientist. He has over a decade of experience working in education as a tutor, teacher, and researcher. Jon is certified to teach physics in the state of New Jersey, where he has done extensive work on curriculum revision and alignment with the NGSS and AP Physics standards. He holds bachelor's degrees in physics and music from Susquehanna University, and an M.S. in Learning Analytics from Teachers College, Columbia University.

Justin Alt is a Data Engineer on the Data Champions Team at Renaissance Learning. He is a former teacher, team leader, and Dean of Instruction with KIPP: Kansas City. He taught and led teams in both English Language Arts and math, and he has a passion for using data to improve outcomes for all students. He holds a bachelor's degree in English from the University of Minnesota, a master's in education from the University of Missouri, St. Louis, and an education specialist degree from National Louis University.

About Renaissance

As a global leader in assessment, reading, and math solutions for pre-K–12 schools and districts, Renaissance is committed to providing educators with insights and resources to accelerate growth and help all students build a strong foundation for success. Renaissance solutions are used in over one-third of US schools and in more than 100 countries worldwide. The Renaissance portfolio includes Star Assessments, for reliable, accurate insights into K–12 student learning; myIGDIs, for accurate assessment of early learning; myON, to increase students' access to high-quality reading materials; Accelerated Reader, to support independent reading practice; Freckle, for teacher-led differentiated instruction; and Schoolzilla, to give educators actionable insights into trends in student attendance and achievement. For more information, visit www.renaissance.com.