Research Software Engineer

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Research Software Engineer

University Overview

The University of Pennsylvania, the largest private employer in Philadelphia, is a world-renowned leader in education, research, and innovation. This historic, Ivy League school consistently ranks among the top 10 universities in the annual U.S. News & World Report survey. Penn has 12 highly-regarded schools that provide opportunities for undergraduate, graduate and continuing education, all influenced by Penn's distinctive interdisciplinary approach to scholarship and learning. As an employer Penn has been ranked nationally on many occasions with the most recent award from Forbes who named Penn one of America's Best Large Employers in 2023.

Penn offers a unique working environment within the city of Philadelphia. The University is situated on a beautiful urban campus, with easy access to a range of educational, cultural, and recreational activities. With its historical significance and landmarks, lively cultural offerings, and wide variety of atmospheres, Philadelphia is the perfect place to call home for work and play.

The University offers a competitive benefits package that includes excellent healthcare and tuition benefits for employees and their families, generous retirement benefits, a wide variety of professional development opportunities, supportive work and family benefits, a wealth of

health and wellness programs and resources, and much more.

Posted Job Title
Research Software Engineer

Job Profile Title
Application Architect

Job Description Summary
The University of Pennsylvania's PennAI initiative and the Penn Advanced Research Computing Center (PARCC) core facility are seeking highly qualified and motivated Research Software Engineer (RSE) to join our team. In this position, you will play a key role in advancing scientific computing through the application of AI methodologies and sophisticated analytical tools, supporting the integration of these technologies within the academic research environment. Research Software Engineers (RSEs) will engage in interdisciplinary collaborations across computing, AI, data science, and related domains, contributing significantly to the university's research mission.

Job Description

Job Responsibilities

- Contribute to cutting-edge research projects that require advanced software solutions and strong software engineering expertise
- Designing and post-training foundation models (including LLMs and VLMs) to support a wide range of academic research projects.
- Developing innovative methodologies for analyzing massive datasets in both cloud-based and on-premises environments, including experience in building agentic AI tools that integrate planning, tool use, and multi-step decision-making into end-to-end machine learning workflows
- Designing and implementing software pipelines for real-time data processing, and developing complex database models for storing and disseminating scientific datasets.
- Collaborating with faculty and researchers to advance computational research initiatives, enabling access to specialized software, tools, and datasets that support AI-intensive methods.
- Creating new software solutions or optimizing existing systems to align with best practices for quality, reusability, robustness, portability, and documentation.
- Working closely with cross-functional teams-including researchers, data scientists, and software developers-to foster a culture of continuous learning and technical excellence.
- Partnering with research groups to develop AI/ML solutions using established artificial intelligence libraries.

Qualifications

- Bachelor's degree in a quantitative discipline such as computer science, engineering, or bioinformatics, with a background in scientific computing and four or more years of professional experience in software development or equivalent combination of education and experience.
- Demonstrated experience in designing foundation models and conducting post-training workflows, including work with LLMs and VLMs.
- Proficiency in Python and its ecosystem of AI/ML frameworks and tools.
- Strong familiarity with HPC and AI computing environments.

Preferred Qualifications:

- Master's or PhD in a quantitative discipline preferred.
- Five or more years of experience supporting AI and HPC code development.
- Willingness to teach, mentor, and engage in continuous learning of emerging techniques.
- Proven ability to identify and select appropriate tools and technologies to ensure the successful execution of complex tasks.

Application Requirement

A Cover Letter and Resume/CV are required to be considered for this position. Please upload your Cover Letter where it asks you to upload your Resume/CV; multiple documents are allowed.

Job Location - City, State

Philadelphia, Pennsylvania

Department / School

Provost's Center

Pay Range

$100,000.00 - $130,000.00 Annual Rate

Salary offers are made based on the candidate's qualifications, experience, skills, and education as they directly relate to the requirements of the position, and in alignment with salary ranges based on external market data for the job's level. Internal organization and peer data at Penn are also considered.

Equal Opportunity Statement

The University of Pennsylvania is an equal opportunity employer. Candidates are considered for employment without regard to race, color, sex, sexual orientation, religion, creed, national origin (including shared ancestry or ethnic characteristics), citizenship status, age, disability, veteran status or any class protected under applicable federal, state or local law.

Special Requirements

Background checks may be required after a conditional job offer is made. Consideration of the background check will be tailored to the requirements of the job.

University Benefits

- **Health, Life, and Flexible Spending Accounts**: Penn offers comprehensive medical, prescription, behavioral health, dental, vision, and life insurance benefits to protect you and your family's health and welfare. You can also use flexible spending accounts to pay for eligible health care and dependent care expenses with pre-tax dollars.
- **Tuition**: Take advantage of Penn's exceptional tuition benefits. You, your spouse, and your dependent children can get tuition assistance here at Penn. Your dependent children are also eligible for tuition assistance at other institutions.
- **Retirement:** Penn offers generous retirement plans to help you save for your future. Penn's Basic, Matching, and Supplemental retirement plans allow you to save for retirement on a pre-tax or Roth basis. Choose from a wide variety of investment options through TIAA and Vanguard.
- **Time Away from Work:** Penn provides you with a substantial amount of time away from work during the course of the year. This allows you to relax, take vacations, attend to personal affairs, recover from illness or injury, spend time with family-whatever your personal needs may be.
- **Long-Term Care Insurance:** In partnership with Genworth Financial, Penn offers faculty and staff (and your eligible family members) long-term care insurance to help you cover some of the costs of long-term care services received at home, in the community or in a nursing facility. If you apply when you're newly hired, you won't have to provide proof of good health or be subject to underwriting requirements. Eligible family members must always provide proof of good health and are subject to underwriting.
- **Wellness and Work-life Resources**: Penn is committed to supporting our faculty and staff as they balance the competing demands of work and personal life. That's why we offer a wide variety of programs and resources to help you care for your health, your family, and your work-life balance.
- **Professional and Personal Development:** Penn provides an array of resources to help you advance yourself personally and professionally.
- **University Resources:** As a member of the Penn community, you have access to a wide range of University resources as well as cultural and recreational activities. Take advantage of the University's libraries and athletic facilities, or visit our arboretum and art galleries. There's always something going on at Penn, whether it's a new exhibit at the Penn Museum, the latest music or theater presentation at the Annenberg Center, or the Penn Relays at Franklin Field to name just a few examples. As a member of the Penn community, you're right in the middle of the excitement-and you and your family can enjoy many of these activities for free.

- **Discounts and Special Services**: From arts and entertainment to transportation and mortgages, you'll find great deals for University faculty and staff. Not only do Penn arts and cultural centers and museums offer free and discounted admission and memberships to faculty and staff. You can also enjoy substantial savings on other goods and services such as new cars from Ford and General Motors, cellular phone service plans, movie tickets, and admission to theme parks.
- **Flexible Work Hours:** Flexible work options offer creative approaches for completing work while promoting balance between work and personal commitments. These approaches involve use of non-traditional work hours, locations, and/or job structures.
- **Penn Home Ownership Services:** Penn offers a forgivable loan for eligible employees interested in buying a home or currently residing in West Philadelphia, which can be used for closing costs or home improvements.
- **Adoption Assistance:** Penn will reimburse eligible employees on qualified expenses in connection with the legal adoption of an eligible child, such as travel or court fees, for up to two adoptions in your household.

To learn more, please visit: https://www.hr.upenn.edu/PennHR/benefits-pay

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To apply, visit https://wd1.myworkdaysite.com/en-US/recruiting/upenn/careers-at-penn/job/3600-Civic-Center-Boulevard/Rese arch-Software-Engineer_JR00115122

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