

Postdoctoral Research Associate
Department of Industrial & Enterprise Systems
Engineering
University of Illinois Urbana-Champaign

The Engineering System Design Laboratory (ESDL) in the Industrial and Enterprise Systems Engineering Department at the University of Illinois Urbana-Champaign is seeking outstanding candidates for a full-time post-doctoral position. This position involves cutting-edge research at the interfaces of multiple domains, including engineering system design, computational geometry, topology optimization, and machine learning, and would be ideal for candidates who are looking to grow their careers in a stimulating and dynamic environment.

The University of Illinois is an Equal Opportunity, Affirmative Action employer that recruits and hires qualified candidates without regard to race, color, religion, sex, sexual orientation, gender identity, age, national origin, disability or veteran status. For more information, visit <http://go.illinois.edu/EEO>.

The successful candidate will work collaboratively with a range of faculty, industry researchers, postdocs, and students on collaborative 3D SPI2 research. SPI2 refers to *spatial packaging of interconnected systems with physical interactions*. This research involves quantitative design automation methods for the spatial arrangement of components and interconnects within irregular three-dimensional volumes (e.g., the complex arrangement of components and connections underhood of a modern car, the performance of which is influenced by spatial, thermal, fluidic, electromagnetic, and other phenomena). For more information about SPI2 research, interested candidates may want to review our SPI2 research website: <https://spi2.illinois.edu/>

Duties and Responsibilities:

- Conducting research in the creation, implementation, and analysis of design optimization methods for SPI2 engineering systems
- Application of expertise in one or more of the following domains to SPI2 design research: computational geometry, design optimization, or mathematical modeling
- Participating in the development of software tools and capabilities used internally and by others, including industry partners
- Collaborating with experts in interdisciplinary environments to develop theoretical and practical approaches for solving real-world spatial packaging problems
- Communicating results through peer-reviewed publications, reports, and presentations to collaborators and to the broader research community
- Assisting the team in writing and submitting high quality proposals, as well as project management
- Mentoring junior researchers both within the ESDL and our broader collaborative teams

Required Qualifications:

- PhD in engineering, computer science, or a related field, completed within 10 years of position start date
- Bachelor's degree in a Science, Technology, Engineering, or Mathematics (STEM) discipline
- Experience with engineering system design optimization and computational geometry

methods

- Strong knowledge and experience with programming languages such as Python or C/C++. Additional experience such as MATLAB would be beneficial.
- Proven initial track record of publications in peer-reviewed journals and external presentations at scientific conferences
- Experience mentoring junior graduate and/or undergraduate student researchers.

Desired Qualifications:

- Ability to work in a collaborative team environment; strong interest in interdisciplinary research
- Ability to communicate effectively and influentially both in writing and orally

The Postdoctoral Research Associate is a full-time (100%), benefits-eligible position appointed on a 12-month service basis. The initial appointment is for one year with the possibility of extension based on performance and funding. The anticipated start date is **no earlier than July 1, 2022** but is negotiable. Applicants may be interviewed before the closing date; however, no hiring decision will be made until after that date. Salary is commensurate with experience and qualifications.

Application: To assure full consideration, applicants should send a cover letter explaining background and interest in working with the Illinois SPI2 research team. Please also include a CV, names of three academic and/or industry personnel who can provide letters of recommendation, and a sample research paper related to this position. Candidates who are interested are encouraged to apply either by email with subject – **“ESDL Postdoc Opportunity_Your Last Name”** to: Prof. James Allison (jtalliso@illinois.edu). *Applications will be accepted until the position is filled.*

The University of Illinois conducts criminal background checks on all job candidates upon acceptance of a contingent offer. Convictions are not a bar to employment. The University of Illinois System requires candidates selected for hire to disclose any documented finding of sexual misconduct or sexual harassment and to authorize inquiries to current and former employers regarding findings of sexual misconduct or sexual harassment. For more information, visit [“Policy on Consideration of Sexual Misconduct in Prior Employment.”](#)

As a qualifying federal contractor, the University of Illinois System uses E-Verify to verify employment eligibility. The University of Illinois must also comply with applicable federal export control laws and regulations and, as such, reserves the right to employ restricted party screening procedures for applicants.

University of Illinois faculty, staff and students are required to be fully vaccinated against COVID-19. If you are not able to receive the vaccine for medical or religious reasons, you may seek approval for an exemption in accordance with applicable University processes.