



**Director of the Language Technologies Institute
School of Computer Science, Carnegie Mellon University
Pittsburgh, Pennsylvania**

The Search

Carnegie Mellon University (CMU) seeks a visionary and highly collaborative leader to serve as the Director of the Language Technologies Institute (LTI) in the School of Computer Science (SCS). This is an exceptional opportunity to lead the academic program that established language technologies as a mainstream field in computer science education and whose innovative research produces breakthroughs that impact everything from education to healthcare. CMU SCS, the nation's top-ranked computer science program, provides an unparalleled scaffold for the LTI's groundbreaking research and is renowned for its collegial, innovative, and enterprising environment, with seamless collaborations across departments, institutes, and with other Schools and Colleges at CMU. The Director will further enable LTI's faculty, staff, and students to push forward the boundaries of the field, connect with pioneering researchers across the School and the University, and perform novel research that will change how we interact with the world.

The School of Computer Science ([SCS](#)) at Carnegie Mellon University ([CMU](#)) is a leading center for computer science research and education. With total annual research expenditures of nearly \$110 million (within a budget of approximately \$180 million), it currently enrolls over 2,300 students across three undergraduate majors, additional undergraduate programs, eight distinct PhD programs, and over 20 Masters programs. It is home to approximately 270 faculty and 540 staff across seven academic departments. Founded as the Computer Science Department in 1965, one of the world's first, it transformed into a School of Computer Science in 1988 with the prescient vision to lead the world in the study of computers and all the phenomena surrounding them. Since then, it has steadily grown in stature and impact. Today, it is widely recognized as one of the top computer science schools in the world, and it is tied for the #1 ranking among computer science organizations by *US News and World Report*.

Overseeing an operating budget of approximately \$20 million, the Director of the LTI will nurture and support its 34 faculty members to ensure the Institute's continued leadership in language technologies research and education. The LTI produces pioneering scholars who develop, test, and experiment with techniques, software, and datasets and deploy them to advance the work of the broad global research community and industry. Breakthrough discoveries in natural language processing, speech recognition, information retrieval, and machine learning that were realized in the Institute have made their way into every aspect of day-to-day life in the United States and globally. Building upon 25-year history, the next Director will ensure that LTI continues as a seedbed for the next generation of talented scholars, nurture and cultivate its exemplary graduate students, provide ample opportunity for early-career faculty growth, and will safeguard the Institute's reputation as among the most innovative and impactful programs in the world.

In this recruitment effort, Carnegie Mellon University has retained Isaacson, Miller, a national executive search firm, to assist the search committee. All applications, inquiries, and nominations, which will remain confidential, should be directed to the search firm as indicated at the end of this document.

Carnegie Mellon University

Formally established in 1967, Carnegie Mellon University ([CMU](#)) is a dynamic institution that has exceptional impact in the world relative to its size and endowment. Although it is among the youngest of the nation's top universities, CMU's extraordinary success emanates from its deeply held core values and a unique heritage of innovation. It is a place of creativity, pragmatism, and ambition, with a tradition of strategically focusing its efforts and resources in areas where it can lead, then pursuing those areas with startling intensity. CMU is firmly committed to academic freedom, tenure protection, and shared governance, providing a fertile environment for faculty success. The University facilitates collaboration across its seven schools and colleges through organizational mechanisms and incentives, such as numerous joint appointments and a dedication to recognizing contributions outside one's main field. CMU has long embraced diversity as a core value that is central and indivisible from the pursuit of intellectual and artistic excellence, and for more than two decades, it has made increasing diversity in every constituency and building a supportive and nurturing community a strategic priority.

A member of the AAU, CMU is a global, research-intensive university with more than 14,000 students, more than 110,000 living alumni, approximately 5,000 faculty and staff, and over 100 research centers. SCS plays a major role at CMU as an engine of innovation and catalyst of intellectual collaborations. Computer science is a connective thread that weaves through all corners of the campus, helping to create the distinctive collaborative culture, rich interdisciplinary environment, entrepreneurial climate, and technology orientation that characterize Carnegie Mellon. In 2020, *US News & World Report* ranked CMU #25 among national universities, and many of its programs are among the top-ranked in the world. It is also ranked #1 in startups per research dollar among AAU universities.

For more information about Carnegie Mellon University, please visit: <https://www.cmu.edu/>

School of Computer Science

The School of Computer Science (SCS) embraces all facets of computing and is recognized globally as one of the leading institutions for computer science education and research. Over the last fifteen years, it has been consistently ranked first by *US News and World Report*, tied with Stanford, MIT, and the University of California, Berkeley. CMU's graduate programs in computer science consistently rank among the very best. A survey by the editors of *The Wall Street Journal* ranked the undergraduate computer science program number one in the United States among corporate recruiters. SCS is ranked number one in specialty areas such as artificial intelligence, machine learning, cybersecurity, and computational biology.

CMU helped define the field of computer science, and it continues to shape the field as computer science has become ubiquitous in academia and society. SCS faculty continue to advance the boundaries of computing research and pedagogy and have received considerable international recognition for their achievements. Twelve SCS faculty and alumni have won the A. M. Turing Award. Other honors include memberships and fellowships in the National Academy of Sciences, the National Academy of Engineering, the American Association for the Advancement of Science,

the Association for Computing Machinery, the Institute of Electrical and Electronic Engineers, and The Alfred P. Sloan Foundation.

The quality and influence of research in the SCS, conducted collaboratively and across disciplines, is an institutional hallmark. A commitment to making a difference in the world is central to the ethos of the School, which values user-interface and translational impact. SCS is also a place that makes big bets in its research agendas to support unique and often uncharted investigative areas and enables projects far beyond what a single faculty member could accomplish alone. Funding is secured from government, nonprofit agencies, and industry partners; in FY2020, research funding totaled \$108 million. For more details of research activity across SCS, please visit: <https://www.cs.cmu.edu/research>.

SCS attracts top students who are drawn to the rigor, distinctiveness, and reputation of its programs. It currently enrolls 2,385 students from around the world; sixty-two percent of whom are at the graduate level (masters 831, doctoral 659), and 37 percent undergraduate (895). The most subscribed undergraduate program is the Bachelor of Science in computer science. “Second” majors in human-computer interaction and robotics, as well as interdisciplinary majors in computer science and the arts, music, and technology are increasingly popular. SCS is the first computer science school to offer an undergraduate degree in AI and Human-Computer Interaction, demonstrating SCS’s commitment to leading the field forward.

The School is also a place of community, collaboration, and diversity of thought and background. It has built and continues to foster a supportive culture that brings out the best in people. SCS invented and adheres to the Reasonable Person Principle, which relies on mutual trust and support among all faculty, staff, and students. In recent years, the University overall, and SCS in particular, has made great strides in increasing the diversity of its faculty and students. Of particular note, 48 percent of SCS undergraduates are women, which is 2.3 times the national average. Committed to hiring diverse and talented faculty, staff, and executives, CMU is a founding member of a regional organization that offers job placement resources to two-career couples.

CMU also benefits from its ever-stronger relationship with the City of Pittsburgh and the greater Pittsburgh region. Over the last decade-plus, as the area has increased its footprint as a technology hub for both large enterprises and startups, the relationship has grown even stronger. Carnegie Mellon faculty, staff, and students enjoy living in a region with growing vibrancy and national reputation.

Language Technologies Institute

The Language Technologies Institute (LTI) was originally established in 1986 by the late Jaime Carbonell as the Center for Machine Translation alongside many leaders who co-created not only the field of Machine Translation but the broader field of Language Technologies, some of whom are vital members of the core faculty to this day. The LTI became a full-fledged, degree-granting academic department in 1996. The Institute boasts core faculty members whose interests are both broad and deep. They lead in virtually every major area of Language Technologies, including speech processing, language processing, information retrieval, machine translation, machine learning, and computational biology. The LTI also contributes leadership, impact, and collaborations in a plethora of other spheres including policy, law, medicine and public health, education, human rights, and sustainability.

Located inside the Hillman Center for Future Generation Technologies on CMU's campus, the Institute houses 34 faculty, 34 administrative and technical staff, 87 PhD students, and approximately 301 master's students. LTI students routinely win top honors in competitions and awards for best paper at national conferences like the Association for Computational Linguistics and the Conference on Natural Language Processing. The faculty includes Fellows of multiple prestigious research societies such as the Association for Computational Linguistics (ACL), the American Association for the Advancement of Artificial Intelligence (AAAI), the International Speech and Communication Association (ISCA), the Association for Computing Machinery (ACM) Special Interest Group on Information Retrieval Academy, the Institute for Electrical and Electronics Engineers, the American Association for the Advancement of Science (AAAS), and the International Society of the Learning Sciences. The faculty publish regularly in all of the top tier conferences in the broader field of Language Technologies, including ACL, Empirical Methods in Natural Language Processing (EMNLP), the Special Interest Group on Discourse and Dialogue (SIGDIAL), InterSpeech, and the International Commission on Mathematical Instruction (ICMI) to name a few and Machine Learning conferences such as the Conference on Neural Information Processing Systems (NeurIPS), International Conference on Learning Representations (ICLR), International Conference on Machine Learning (ICML), and the AAAI, with some earning multiple best paper awards and shared task competitions per year. Faculty members are featured in numerous keynote talks per year, including invitations to speak at the World Economic Forum and other public appearances and press coverage. The faculty also produce tools and resources that are freely available and in wide distribution, with some boasting downloads in the thousands per month.

Educational Programs

The LTI provides a hands-on experience and rigorous educational programs that exemplify CMU's approach to pedagogy. Degree granting programs include the PhD in Language and Information Technology and four Masters level programs, one of which is research based and can lead to further academic pursuits, and three of which are professional programs that often lead to careers in industry or government. While in the undergraduate space, the LTI offers a Language Technologies Minor for computer science students to learn specifically about language technologies and to apply that knowledge through a directed project.

The research-based degree programs are the Master of Language Technologies (MLT) and the PhD program in Language and Information Technology. The MLT is the world leader in preparing students for research in the field of language technologies. Many MLT graduates continue on to Ph.D. programs at CMU and other top institutions, while others pursue careers at companies emphasizing research and rapid innovation. The PhD focuses on developing the next generation of scientific and entrepreneurial leaders. The LTI also offers a dual-degree PhD in Language and Information Technology in partnership with various institutions in Portugal, including the University of Lisbon, the University of Aveiro, and the University of Coimbra. Students pursue their PhD, splitting their time between Portugal and Pittsburgh.

The Masters in Intelligent Information Systems (MIIS) is a professional masters that focuses on recognizing and extracting meaning from text, spoken language, and video. MIIS students receive the department's deepest exposure to content analysis and machine learning. This program includes faculty advising and a group-oriented capstone project. These graduates tend to move on to careers in industry (Apple, IBM, or Google) or government.

The Masters of Science in Artificial Intelligence and Innovation (MSAII) is a professional degree program that combines a rigorous AI and machine learning curriculum with intrapreneurship and entrepreneurship and real-world team-based experience in identifying a new AI market niche. The capstone project affords the opportunity for a team to develop an innovative, working solution to a real-world problem provided by an external corporate sponsor. Students gain critical practical skills, such as making persuasive technical presentations, forming and managing development teams, and evaluating the potential of new market ideas. The program is very selective, boasting an acceptance rate of approximately 5% and a yield of 80%.

The Masters of Computational Data Science (MCDS) is the largest of the LTI's education programs and is a professional masters that focuses on engineering and deploying large-scale information systems. Students gain the skills and knowledge to develop the layers of technology involved in the next generation of massive information system deployments and analyze the data these systems generate. The MCDS program successfully attracts new industry partners through its capstone program, and graduates are sought-after software engineers, data scientists, and project managers at leading information technology, software service, and social media companies.

In 2020, the LTI, in partnership with the Heinz College's Business Intelligence and Data Analytics (BIDA) program, welcomed the first cohort of the United States Army AI Task Force. This cohort included 26 MCDS scholars in an Executive Education Partnership. These students represent some of the Army's top talent from a diversity of backgrounds and will provide the task force with professional-level data scientists and engineers. The program provides educational opportunities that support the safe and ethical use of data and AI to advance national defense and security and is seen as a key building block for the digital transformation of the U.S. Army.

Research

Human language technologies have become increasingly central to the interface of computation and society. Information retrieval, machine translation, and speech technology are used daily by the general public, while text mining, natural language processing, and language-based tutoring are common within more specialized professional or educational environments. Spanning a wide variety of research relationships, the research of the LTI aims to be creative, entrepreneurial, and boundary challenging.

To complement the Institute's core strength in scientific research, it features a vital network of industrial collaborations and government partners. Faculty research areas include Natural Language Processing and Computational Linguistics; Multimodal Computing and Interaction; Information Extraction, Summarization and Question Answering; Information Retrieval, Text Mining and Analytics; Knowledge Representation, Reasoning and Acquisition; Language Technologies for Education; Speech Processing; Spoken Interfaces and Dialogue Processing; Machine Learning; Machine Translation; and Computational Biology.

The LTI receives \$11.6 million in sponsored projects revenue, and approximately \$9.5 million of those funds are from federally sponsored research, primarily from the Defense Advanced Research Projects Agency, Intelligence Advanced Research Projects Activity, and the National Science Foundation (NSF). The NSF has provided 27 government awards to LTI. The remaining \$2 million is provided by industry partners such as Google, Microsoft, Facebook, and Amazon. Some of the LTI's top industry partners include Apple, Bank of New York Mellon, BMW of America, Boeing, Facebook, Hyundai, Lockheed Martin, Perspecta Labs, Siemens, Singapore Defense

Science and Technology Agency, Sony, and Samsung. Some of these partners come to LTI through its graduate capstone programs. Both sponsored research and industry funding continue to support PhD and research Masters students.

The Role

The Director of the LTI has the unique opportunity to lead one of the world's most renowned human language technology academic programs. The LTI forms the largest concentration of language technology experts worldwide across its faculty ranks, tenured and non-tenured. The next LTI Director must uphold the Institute's reputation for groundbreaking research and high-quality education.

The Director will be a well-established scholar in the field who will strategically lead the Institute with a mind toward mentorship, community building, and support for all members of the Institute. They need to be a transparent communicator and adept relationship builder who creates consensus. Experience with industry and fundraising as well as a clear passion for providing opportunities to others is essential.

The Director of the LTI will report to the Dean of the School of Computer Science and be a key member of the dean's leadership team. They will collaborate closely with other department chairs/institute directors and faculty across the School and University, as well as seek partnerships with units outside the University. Reporting to the Director are the LTI faculty, educational program chairs, and the associate business director to whom managerial and administrative staff report. The Director is responsible for an approximately \$20 million operating budget.

Opportunities and Challenges

The key directives for the next Director of the Language Technologies Institute are as follows:

Provide direction and vision for the future of the field

The mission of the LTI has broadened and changed over its 25-year existence. It is critical that the Director be deeply knowledgeable in the language technologies field and be able to anticipate new directions for scholarship and applications. Appreciation and support of LTI's interdisciplinary work at the intersection of language technologies, linguistics, the social sciences, and machine learning will be needed to remain the world leader in the field. A broad but directed, proactive vision for current and future research areas coupled with nimbleness and strong support of the creative and entrepreneurial nature of the LTI will ensure its success.

Build revenue and relationships

The research mission is the driving force behind the LTI's success as the leader in the field. The next Director needs to discern opportunities to leverage and create models for collaboration with industry and government sponsors. They should have a natural affinity for and attentiveness to developments from startups to established, large-scale industry partners with an eye toward building relationships. Diversification of income sources from external partnerships to educational programs, such as online certificate programs or executive education partnerships, need to be considered. The Director should be willing to re-evaluate business models and structural elements

of the Institute to capitalize on the entrepreneurial ideas and solutions coming out of the LTI and to promote sustainable development of the Institute.

The LTI educates the future leaders in the field. Hundreds of professional master's graduates go out into the world every year and CMU graduates make up a large fraction of all computer science professors. The Institute produces a large talent pool, many of whom do not stay in Pittsburgh. The next Director must ensure that while the LTI continues to work with its current collaborators, it creates the kind of relationships that will establish a technological hub of activity in the natural language processing field in the Pittsburgh area.

Champion equity of opportunity and an inclusive and supportive culture

To maintain the vibrancy and quality of the LTI, the Director needs to foster a culture and environment that allows its members to grow and flourish. They will bring best practices and renewed focus on supporting new faculty and students through mentorship and guidance with specific attention paid to recruitment and retention. Faculty should experience fair and equitable support and policies and be expected to share service to the Institute. Administrative and technical staff will be acknowledged for their tireless contribution and service to the efforts of the Institute. The Director needs to be an empathetic listener, a transparent communicator, a strong advocate, and establish a cohesive, inclusive culture and community for the entire Institute.

The LTI has established a Diversity, Equity, and Inclusion committee that has begun to address and prioritize diversity initiatives. One effort has involved adjusting and reframing the rubric for hiring faculty and for graduate student admissions to augment accepting a more diverse student body. Establishing a mentorship program for both faculty and students has been beneficial. The new Director can assist in these efforts by providing more transparency with students, faculty, and staff and by providing leadership in future efforts to shift the culture to acceptance of diverse life and career paths.

Supervise and advise LTI's pedagogical mission

While the LTI enjoys the freedom of providing a wide variety of courses in current and exciting topics, the Director must turn a critical eye toward the management of the education programs that are core to the identity of the Institute. The Director needs to proactively work with faculty to revisit planning and standards for high-quality courses, guidelines for teaching, and providing a sustainable curriculum. Equitable distribution and sharing of instruction between faculty should be considered and compensation for teaching should be addressed. Clear communication about teaching load and expectations is essential for the new faculty joining the teaching ranks of the LTI.

As the work in language technologies has become more commercially important there has been more interest in certificate programs, executive education, and undergraduate courses in natural language processing. There has been movement toward providing an undergraduate major in LTI and discussion about offering certificate programs to individuals who want to stay current in the field. In cooperation with the faculty, the Director needs to examine the feasibility of creating new curricula and educational offerings in the Institute.

Qualifications and Characteristics

- PhD degree and record commensurate with the rank of full professor at CMU;
- A strong record of distinction and accomplishment in language technologies or a related field;
- Entrepreneurial, responsive, and nurturing of creative, cutting-edge research;
- Transparent communicator and empathetic listener who has experience with change management;
- A demonstrated commitment to diversity, equity, and inclusion;
- A track record of success in faculty recruitment, retention, and development;
- Knowledge and expertise in education, research, and administration;
- A deep understanding of the interface of academia and industry;
- Excellent interpersonal skills;
- Adept management of administrative staff;
- Familiarity with the culture of the SCS;
- Consistent, clear, approachable, open-minded, and interested in the success of all.

Applications and Nominations

Review of applications, nominations, and expressions of interest will begin immediately and continue on a confidential basis until an appointment is made. All inquiries, nominations/referrals, and applications (including curriculum vitae and letters of interest responding to the position priorities outlined above) should be submitted via Isaacson, Miller's website to:

<https://www.imsearch.com/8105>

Andrew Lee, Managing Partner
Vijay Saraswat, Managing Associate
Jane McInerney, Senior Associate

Carnegie Mellon University considers applicants for employment without regard to, and does not discriminate on the basis of, gender, race, protected veteran status, disability, or any other legally protected status.