Principal Investigator (Research Scientist) Job Description

At SoarTech, our focus is in the development of artificial intelligence (AI) that reasons like humans do, to automate complex tasks, simplify human-machine interactions, or model human behaviors. Our philosophy is three-fold: to be an augmentation to, not a replacement of, the human; to think “top-down, not bottom-up;” and to be transparent so that decisions and processing are communicated to the human and in human-like terms. SoarTech is growing and we are looking for individuals interested in helping research, develop, and implement this exciting technology into everyday operations.

The Principal Investigator (Research Scientist) at SoarTech leads research, development, and transition activities of new technology. This includes developing and executing new concepts for addressing some of the most challenging issues associated with the use of AI and, as such, helps in the creation of R&D proposals and has authority over the execution of projects including research outcomes, engineering accomplishments, transition, and budget oversight. The Principal Investigator also publishes study results as first author or co-author. This position requires personal initiative to accomplish technological innovation and creativity in support of new business development and project execution. This position serves as the primary programmatic liaison with the sponsor.

We are currently seeking PIs for our Autonomous Platforms business area:

Autonomous Platforms and Robotics:

- **Autonomy:** Like Human Behavior Models in simulation, our intelligent agents are the mechanism for decision-oriented control. Decision-oriented control is capable of working with single or multiple platforms for task and mission planning and can learn behaviors from demonstration.
- **Human-machine interaction:** Dialogue-based, mixed-initiative interaction control systems and speech interfaces such as our Universal Controller make the job of tasking a robot or autonomous vehicle as natural as possible through the integration of speech, sketch, voice, and haptics to create an efficient Human-Robot Interface under diverse operational situations. Our interfaces are designed to be platform independent and meet industry standards.
- **Situational Awareness:** Intelligent display of information on Operator Control Units enables the human and machine to share situation awareness necessary for team decision making. A management-by-exception control scheme allows operators to spend less time interacting with the system and more time doing other important tasks.
- **Trustworthy Autonomy:** Providing cyber-resilient, fail-safe autonomous systems increases trustworthiness. Autonomous platforms have intrinsic challenges unique from systems where humans have more control. We architect systems to support meta-level reasoning, bounding autonomy within tactical-level behavioral constraints, detecting and reacting to potential problems, and alerting users through explanation-based reasoning.

Duties and Responsibilities for Principle Investigators:

- Support and collaborate with others, both within and outside SoarTech, to develop successful research and development proposals for external funding that align with SoarTech’s strategic direction.
- Lead and collaborate with others, both within and outside SoarTech, in the translation of scientific research into engineering practice.
- Disseminate findings through peer-reviewed publications, presentations at scientific and community meetings, internal and external seminars, and other venues.
• Provide leadership and management of research and development projects.
• Develop a program strategy and implementation plan including short- and long-term goals and objectives for research programs.
• Stay current in area of research interest through reviews of the relevant literature and participation in industry-wide forums and discussions.
• Pursue a technology strategy in support of company initiatives that satisfy both specified and unspecified sponsor needs, and that support stakeholders ranging from end users to high-level decision makers.
• Create and nurture large-scale and long-term opportunities by understanding sponsor funding profiles and how they are likely to change during the next several years; develop an accurate assessment of high-probability funding opportunities.
• Provide consultation, review or co-investigator collaboration on colleagues’ projects and studies, as well as mentorship to junior-level investigators.
• Location can, at times, be flexible; some travel will be required.
• Performs other duties as assigned.

**Required Skills and Experience:**
- Ph.D. or equivalent level degree.
- Familiarity with and insight into direction of DoD research community; ability to help position SoarTech for growth in that industry specifically including DARPA, ONR, AFRL and/or RDECOM.
- Ability to integrate ideas from multiple disciplines.
- Familiarity with the DoD research community players, processes and procedures (e.g., the military services and DARPA competitive BAA processes).
- A strong first author publication record in peer-reviewed journals with demonstrated expertise in an established area of research interest.
- Experience in developing effective collaborations with academic and industrial partners.
- Experience in one of the following (or a similar field): human behavior modeling, cognitive modeling, machine learning, multi-agent systems, deep learning, agent-based social simulation, intelligent user interfaces, complex adaptive systems, decision support systems, simulation, robotics, data fusion, and/or game development is desired.
- Demonstrated professional maturity.
- Excellent communication skills, including facilitation, negotiation, and collaboration.
- Leadership, mentoring, and other skills needed to support teams and to work with subcontractors and prime contractors to accomplish common goals.

**Preferred Skills (Not Required):**
- Established record of research accomplishment, including a history of obtaining significant external funding in the DoD research community.
- Experience with contracts and other legal documents desired, including experience in federal government acquisition process.
- A general understanding of Project Management best practices for scheduling, budgeting and risk management.

**Security Requirements**
- Ability to obtain and maintain a Security Clearance (Security clearances require U.S. citizenship and a background check clear of felony convictions.)

*Soar Technology offers a full package of benefits and competitive salary, flex time, excellent group medical, vision, and dental programs. At SoarTech, we continuously invest in the*
development of your skills by providing budgeted time for technical skills development for all of our engineers.

Soar Technology, Inc. is an equal opportunity employer. Applicants selected will be subject to a Government security investigation and must meet the eligibility requirements for access to classified information; eligibility requirements include U.S. citizenship.

Please email careers@soartech.com to express interest in this role.