

Post Doc Research Associate – Edge Artificial Intelligence in Soil Science

The Soil Science Artificial Intelligence Research Group at the University of Florida, Southwest Florida Research and Education Center, is seeking a postdoctoral researcher that will use cutting-edge Artificial Intelligence (AI) to deliver exceptional monitoring capabilities and real-time actuation for a diverse range of agricultural applications. As a Post Doc researcher in our dynamic team, you will be at the forefront of research that lies at the intersection of deep learning and sensing systems. You will work alongside a group of data engineers and agronomists, contributing your expertise to develop novel integrated sensing systems that can detect and quantify chemical and biological parameters crucial for various stages of food production. This includes everything from enhancing soil quality to mitigating food safety risks. Your role will involve both the development and deployment of edge processing, including AI functions that can be deployed on the far edge. The primary focus will be on edge analytics, utilizing the power of distributed edge computing to support real-time stream processing across heterogeneous data sources, such as hyperspectral and thermal imaging. In summary, as a Postdoctoral Researcher with our Soil Science Artificial Intelligence Research Group, you will play a pivotal role in advancing agricultural technology. Your work will directly contribute to the development of AI-driven solutions for real-time monitoring and intervention in agriculture, ultimately benefiting both the industry and the environment.

The position is available immediately and is a full-time position. Initial appointment for Post Doc is for two years and may be renewable up to four-year dependent upon satisfactory performance.

Background information

The University of Florida is a Land-Grant, Sea-Grant, and Space-Grant institution, encompassing virtually all academic and professional disciplines, with an enrollment of more than 56,000 students. UF is a member of The Association of American Universities. The Institute of Food and Agricultural Sciences includes the College of Agricultural and Life Sciences, the Florida Agricultural Experiment Station, the Florida Cooperative Extension Service, the College of Veterinary Medicine, the Florida Sea Grant program, and encompasses 16 on-campus academic departments and schools, 12 Research and Educational Centers (REC) located throughout the state, 6 Research sites/demonstration units administered by RECs or academic departments, and Florida Cooperative Extension Service offices in all 67 counties (counties operate and maintain). The School of Natural Resources and Environment is an interdisciplinary unit housed in IFAS and managed by several colleges on campus. UF/IFAS employs nearly 4,500 people, which includes approximately 990 salaried faculty and 1,400 permanent support personnel located in Gainesville and throughout the state. IFAS, one of the nation's largest agricultural and natural resources research and education organizations, is administered by a Vice President and four deans: the Dean of the College of Agricultural and Life Sciences, the Dean for Extension and Director of the Florida Cooperative Extension Service, the Dean for Research and Director of the Florida Agricultural Experiment Station, and the Dean for the College of Veterinary Medicine.

The Southwest Florida Research and Education Center in Immokalee, near Naples and Fort Myers, two beautiful cities on the gulf coast of Florida, USA. The researcher center is dedicated to interdisciplinary fundamental research in the field of agricultural sciences with a recent focus on Artificial Intelligence (AI) to build a tech-driven agricultural domain. <https://swfrec.ifas.ufl.edu>

Position description

The successful candidate is expected to contribute to the collection and analysis of diverse in situ datasets (e.g., hyperspectral), the development of cutting-edge AI algorithms (e.g., deep learning, edge computing) and processing techniques to fully exploit raw data and forge a path for a diverse spectrum of applications in soil science, such as real-time measurements, mapping and informed decision making (e.g., variable rate fertilization). Moreover, the candidate is expected to disseminate the research findings at relevant scientific conferences and symposiums, as well as to peer-reviewed journal articles.

Required Qualifications

- Ph.D. degree in computer science, electrical and computer engineering, agricultural and biosystems engineering, or related fields
- Proven technical and hands-on experience in one or more of the following areas: Embedded Systems, Automation, AI/ML, GPGPU programming
- Proficient in Python
- Track record of innovative research and successful publications
- Excellent written and verbal communication skills

Preferred Qualifications:

- Github updated profile and publications' list will be considered a strong advantage.

Benefits

Salary is negotiable, commensurate with education and experience.

Application process information

Interested candidates are required to contact Dr. Nikolaos Tziolas at ntziolas@ufl.edu and provide a cover letter with their research interests and experiences (1 page), curriculum vitae as well as contact information for two references (email title "Inquiry about Post Doc Soil Health AI"). For full consideration applications must be submitted by 10 December 2023.