



SOFTWARE RESEARCH ENGINEER IN NEUROMORPHIC COMPUTING

Company: Spin-Ion Technologies

Location: Palaiseau - FRANCE

Type: Permanent (CDI), Full-time

Spin-Ion Technologies is a cutting-edge start-up company at the forefront of spintronic technologies, which has developed an innovative manufacturing solution to create the next generation of intelligent and energy-efficient AI chips for neuromorphic computing.

To bring powerful AI solution to the edge, Spin-Ion Technologies is looking for a talented software scientist to participate to the development of an in-memory computing demonstrator for on-chip learning (<https://www.spin-ion.com/eic-project/>) composed of magnetic synapses. This demonstrator involves both hardware & software developments, advancing deep learning capabilities for future embedded and neuromorphic systems. The project involves working with leading international teams in artificial intelligence and major industrial partners.

Position Overview

Spin Ion Technologies is seeking a high-level junior or senior scientist to join our dynamic team. The ideal candidate will have a very good knowledge in algorithm development for neuromorphic computing and a desirable experience in electronics and chip design. The candidate should be willing to open new directions in applications of neuromorphic computing as well as to contribute to business activities within the start-up.

Candidates should hold a PhD with a desirable post-doctoral experience (2+ years). The ability to conduct successful R&D activity in a deep tech start-up environment is essential.

Responsibilities

- **Algorithm Development:** design, implement, and optimize algorithms for neuromorphic computing based on experimental results on magnetic devices (such as ANNs, BNNs, SNNs, Continual Learning, Local Learning)
- **Performance Optimization:** optimize software performance for real-world applications, considering both computational efficiency and energy consumption, in particular for edge IA.
- **Involvement in Chip Design:** hardware and software co-development, chip design optimized for specific learning algorithms
- **Collaborate with hardware engineers, physicists, and neuroscientists** to integrate software solutions.
- **Research Contributions:** stay abreast of the latest advancements in neuromorphic computing, spintronics, and related fields, and contribute to research publications.
- **Documentation:** maintain clear and comprehensive documentation for software code, algorithms, and simulation methodologies.

- File patents and generate know-how to contribute to the assets of Spin-Ion Technologies.
- Publish research findings and present at conferences to contribute to the external scientific community.
- Contribute to the development of business activities within the start-up.
- Manage research collaborations with academic and industrial partners.

Qualifications

While no candidate will embody every quality, the successful candidate will have experience with some of the following aspects:

- Ph.D. in Physics, Electrical Engineering, Computer Science and Materials Science.
- Expertise in neural network programming (Pytorch,..).
- Expertise in algorithm development for emerging devices.
- Expertise in Microelectronics, neuromorphic computing, emerging technologies (MRAM, ...).
- Manage research collaborations with academic and industrial partners.
- Experience with data processing and analysis (Python,..).
- Good English communication skills.
- Enthusiastic to the work and strong team spirit.
- Good at managing projects and multiple tasks.
- Ability to be proactive and flexible.

Benefits

- Competitive salary.
- Incentive plan for patent submission.
- Opportunities for professional development and career advancement.
- Collaborative and innovative work environment.
- Flexible work schedule and remote work options.
- Professional development opportunities.

If you are passionate about pushing the boundaries of neuromorphic computing and contributing to groundbreaking research, we invite you to apply for this exciting opportunity. To apply, please send your resume and cover letter to contact@spin-ion.com

Spin Ion Technologies is an equal opportunity employer and encourages candidates from all backgrounds to apply.

Application Deadline : March 31st, 2024

Salary : >50 k€ brut depending on experience