



Signal Processing & Machine Learning Architect

The Basics

- This is a full-time position for a current vacancy.
- Candidates should live in or be willing to relocate to the Eastern Standard Time Zone in Canada or the United States, with preference for Toronto and Boston.
- The salary range for this position is \$200,000 - \$230,000 CAD. If you're located outside of Canada, any variations in range will be discussed during the intro call.
- The hiring manager for this position is Ben Nashman, and you can see his LinkedIn profile [here](#).

In this role, we'll expect you to:

- Guide the DSP/ML team in setting technical priorities and planning tasks in alignment with company goals.
- Architect, build, and debug our signal processing and machine learning pipeline.
- Drive the development of sophisticated signal processing techniques to process magnetic resonance data (e.g., preprocessing, denoising, MRI signal reconstruction, filtering).
- Oversee the design and training of traditional machine learning and advanced deep learning models for processing and analyzing magnetic resonance spectroscopy data.
- Partner with the software team to transition DSP algorithms from ideation to functional code in the final product, blending research and practical application.
- Champion the long-term technical vision for the DSP/ML team, ensuring alignment with medium- and long-term company goals.
- Model best practices for documentation, communication, and technical decision-making.

- Act as a key technical liaison with other teams and engage with external partners when needed to accelerate progress or identify innovation opportunities.
- Help the team maintain focus and resilience during periods of change by reiterating priorities and clarifying trade-offs.

You might be right for this role if you have:

- 7+ years of experience in signal processing, with hands-on work such as spectral analysis, chemometrics, denoising, and feature extraction.
- Experience steering prioritization and execution of technical initiatives with long-term strategic value.
- Experience with deep learning techniques for signal processing and/or image processing.
- Experience with machine learning frameworks such as PyTorch and Keras.
- Proficiency in writing efficient, clean, and well-documented code in MATLAB and Python.
- Demonstrated experience with low-SNR data, ideally in a biomedical context.
- A proven track record of building large-scale, cloud-based ML training pipelines.
- The ability to elevate peers by modeling effective feedback, communication, and collaboration practices with both technical and non-technical stakeholders.
- Proven track record of creative, out-of-the-box problem solving in scientific or engineering contexts, driving progress where standard methods fall short.
- Excellent communication, interpersonal and empathic skills.
- Demonstrated drive to tackle exceptionally complex problems with rigour, creativity and speed.

About Synex Medical

At Synex, our work culture is defined by a blend of ambitious goals, intense passion for our mission, and a deep commitment to the well-being of our employees. We encourage our team to set ambitious goals and provide the autonomy needed to achieve them.

While achieving significant milestones can require extra effort and collaboration at times, we also prioritize rest and self-care to maintain our team's well-being. Our policies and practices encourage taking time for personal and family commitments, ensuring that our employees can maintain a fulfilling life outside of work.

Developing strong social connections helps tie us together even when we are located in different places. Routinely, we meet in our regional offices for paid company lunches, learning sessions and social events.

Transparency and ethical standards are also foundational to how we operate. We collaborate with external partners from academia and industry to review and provide feedback on our work, ensuring scientific rigor and accountability. Internally, we promote psychological safety through regular check-ins with employees, anonymous surveys, and multiple avenues for reporting concerns, including an online reporting tool. These measures foster a supportive and open environment where employees feel safe to voice their concerns and contribute to the company's success.

Benefits

Building towards a predictive healthcare future starts with our team. We are dedicated to offering a strong benefits package which will improve as Synex expands. We currently offer:

→ Health, Dental, and Vision Insurance: We cover 100% of the premiums for our employees. Coverage for partners and dependents varies based on location and plan.

→ Flexible Time Off: We don't place annual limits on vacation and sick days, and we require that you take at least 3 weeks of vacation each year (not counting company holidays!).

→ Parental Leave: We provide 6 months of fully paid leave for all parents—whether you're a birthing, non-birthing, or adoptive parent.

→ Professional Development: Invest in your growth with up to \$1,500 annually for courses, certifications, or conferences.

Use of Artificial Intelligence (AI) in Hiring

Synex Medical does not use automated AI systems to screen, assess, or select applicants. All applications are reviewed by a human. We may occasionally use AI tools to assist with reviewing resumes or summarizing interview notes, but these tools do not make or influence selection decisions.