



CORE-TECHNOLOGY SOFTWARE ENGINEER

DUTY STATEMENT

As a member of the core-technology team at Seeing Machines you will be:

- Working with PhD level computer vision scientists to sculpt new algorithms for tracking geometry from 2d and 3d video cameras.
- Porting and optimizing algorithms to run on new platforms including GPUs and embedded devices.
- Developing performance benchmarks and tests to continuously measure and improve algorithm quality.
- Developing and debugging API quality real-time multi-threaded C++ object oriented code.
- Optimizing inner loops by using device-specific instructions, such as x86 SSE or ARM NEON.
- Contributing to improve processes and methods that enhance development productivity across the team.

If you are intimately familiar with the power and pitfalls of C++, have an interest in API design, image processing, 3d geometry, GPUs, human-machine interfaces, auto-stereoscopic displays, and next-generation visual computing products, then consider furthering your career by becoming part of a small, diversely skilled and experienced team responsible for the commercial R&D of state-of-the-art machine vision algorithms.

This is a role for a high-performing individual with several years of R&D experience. The applicant must demonstrate excellent object-oriented skills, should have a strong foundation in computer science and be seeking a career role as a software engineer specializing in the development of high-performance maintainable cross-platform algorithms.

While strong technical skills are a must, the position also requires someone who is at their best when working in a team, who is both able to learn from their peers and able to mentor in-kind, without prejudice. Candidates must therefore demonstrate an ability to express technical concepts clearly and calmly, and be of a nature that promotes team cohesion. A sense of humour is a must.

Applicants must be able to live and work in Canberra, Australia.

Applicants of exceptional quality from outside Australia may be considered.

SELECTION CRITERIA

Qualifications/Knowledge

1.	Tertiary computer science, engineering degree or equivalent experience, with good marks in linear algebra and statistics.	ESSENTIAL
2.	Good oral and written English communication skills.	ESSENTIAL

Skills/Experience

1.	4+ years experience developing with C++ with a solid understanding of compiler behaviour.	ESSENTIAL
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2.	Experience writing code that utilizes the C++ STL and Boost libraries.	ESSENTIAL
3.	Experience writing and debugging SIMD optimized image or numerical processing functions on x86, ARM or TI-DSP.	ESSENTIAL
4.	Experience writing algorithms in CUDA or OpenCL.	ESSENTIAL
5.	Experience developing under Visual Studio on Windows	ESSENTIAL
6.	Experience developing in Linux or OSX	ESSENTIAL
7.	Experience writing native applications for Android or iOS	HIGHLY DESIRABLE
8.	1+ years Python	HIGHLY DESIRABLE
9.	Experience using Matlab	DESIRABLE
10.	Knowledge and experience with multithreaded / multi-process programming techniques and pitfalls.	ESSENTIAL
11.	1+ years in Java or C#.	DESIRABLE
12.	Testing experience – automatic unit testing in C++.	ESSENTIAL

Personal Attributes

1.	Ability to work effectively in a team and respond cooperatively to the requirements of other company members	ESSENTIAL
2.	Ability to champion ideas and achieve consensus within a team	ESSENTIAL
3.	Ability to set priorities and meet deadlines	ESSENTIAL
4.	Strong drive to apply software engineering principles, and pragmatically improve software quality within a dynamic development environment	ESSENTIAL
5.	Ability and desire to continuously learn new skills	ESSENTIAL



APPLICATION PROCEDURE

Assessment will be against the selection criteria, and applications should be framed accordingly.

Submit written applications, including a CV, any links to earlier work, and some sample C++ source code, preferably by email to recruit@seeingmachines.com.

COMPANY INFORMATION

Seeing Machines Ltd. builds machines that see. In particular the company specializes in computer vision algorithms that are able to track faces with high fidelity in real-world environments (outside the office).

We are looking to hire people as the company grows to help us take advantage of the enormous commercial opportunities. We are looking for motivated individuals to join a dynamic and friendly environment, working with the latest camera and processing technology. We offer competitive remuneration and conditions. The company headquarters are located in 11 Lonsdale St. Braddon Canberra, less than a minute walk from the heart of the CBD and right next to the best coffee in the city.

The company was formed in July 2000. Currently there are approximately 36 staff are employed in Australia and the US.