

# Nathan Weston

Software Engineer  
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617-335-0719

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## SKILLS

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- Highly experienced with C, C++, Python, Common Lisp
- Linux, Windows, and MacOS development
- Parallel programming
- GPU programming with CUDA
- Image processing and computer graphics
- Assembly programming and debugging
- Compilers and static analysis

## EXPERIENCE

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### **GrammaTech, Inc**, Ithaca, NY

*Software Engineer – Research (November 2015-October 2018)*

Working with a small team to research new techniques for software analysis, automatic program repair, and security hardening.

#### **Responsibilities:**

- Work with researchers to build a product based on binary rewriting research
- Develop prototypes and perform experiments to validate research ideas
- Contribute to presentations and written reports

#### **Accomplishments:**

- Rapidly came up to speed on existing technology in binary rewriting and program repair
- Developed and tested novel research ideas
- Created multiple successful prototypes for demonstrations to research sponsors

### **GenArts, Inc**, Cambridge, MA

*Principal Software Engineer (January 2005-September 2015)*

Lead developer for Sapphire Plug-ins, the premiere suite of visual effects plug-ins for film and video post-production.

#### **Responsibilities:**

- Design and implement new effects using cutting-edge image processing algorithms.
- Maintain the compiler and runtime for an in-house image processing language.

- Provide customer support for production issues
- Write high-performance, multi-threaded and GPU-accelerated code.
- Ensure that algorithms produce identical results on CPU and GPU, across multiple operating systems and plug-in APIs.
- Continually review and improve development processes.

**Accomplishments:**

- Led a development team which didn't miss a deadline for over 5 years
- Re-architected our core product (200,000 lines of code) to improve image quality, performance, flexibility, and maintainability.
- Implemented GPU acceleration for our core image processing algorithms, leading to massive performance benefits.
- Developed powerful editing applications using Qt and Python, which allow users to design their own complex video effects.
- Drove adoption of best practices such as unit testing and code review.

## **EDUCATION**

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M.S. in Computer Science, Brown University

B.A. in Computer Science, Hamilton College