

Josef Andrew Graus

Senior Software Engineer/Computer Scientist

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Josef has a decade of software engineering experience, and a deep academic interest in all things geometric. Seeking pragmatic yet novel solutions to difficult computational problems, his experience at George Mason University combined with continually evolving industry demands in his career bridges the gap between cutting-edge research and professionally polished products.

Education

2015 – Present	Ph.D. Candidate, Computer Science <i>George Mason University</i>
2012 – 2014	M.Sc. Computer Science <i>George Mason University</i>
2012 – 2014	Computer Games Technology Graduate Certificate <i>George Mason University</i>
2008 – 2012	B.Sc. Computer Science <i>George Mason University</i>
2008 – 2012	B.Sc. Mathematics <i>George Mason University</i>

Experience

08/2019 – Present	Senior Software Engineer <i>SRC, Inc.</i> <ul style="list-style-type: none">Currently developing embedded software for radio and positioning system hardware.
01/2019 – 08/2019	Senior AI Software Engineer <i>Knexus Research Corporation</i> <ul style="list-style-type: none">Developed applications for differential privacy techniques related to permanently anonymizing survey information while preserving statistical integrity.
01/2013 – 12/2018	Senior Software Engineer <i>Nikon Metrology, Inc.</i> <ul style="list-style-type: none">Worked as a computational geometer writing algorithms for high-quality feature extraction from unstructured coherent laser radar (CLR) scan data.Responsible for researching and implementing computer vision and image processing solutions to novel problems regarding target acquisition, measurement, and tracking.

- Provides support and in-house tools for other engineering teams and scientists in development of the MV331/351 series CLR.

05/2011 – 12/2012

Software Engineer

Crucial Security (subsidiary of Harris Corporation)

- Internal Research and Development (IRAD) for security-focused prototyping.
- Major products included an Android-based forensic tool, a distributed VMware based fuzzer, and a symbolic ROP (return-oriented programming) solver.

05/2007 – 08/2010

Software Engineer

NCS Technologies, Inc.

- Contributed code and expertise to an in-house automatic deployment solution (ADS) to streamline production and testing of a variety of hardware (desktops, laptops, thin clients, servers, etc.)
- Wrote virtualized testing environments using preboot execution environment (PXE) proxy sessions, virtual storage area network (SAN) booting, and simple object access protocol (SOAP) (XML over HTTP) service-oriented architecture (SOA)-style agent service communications.

Publications

08/2020

Interacting with Self-Similarity

Josef Graus, Alec Jacobson, Yotam Gingold

Computer-Aided Design, Volume 130, January 2021, 102931

doi:10.1016/j.cad.2020.102931

Skills

Programming

C++11/14, C, Python, C#, Matlab, GLSL, LaTeX

API/SDK

Eigen, Vulkan, OpenGL 4.x, TensorFlow, libigl, sqlite3

Platforms

Windows (MFC/WPF), Linux [Debian/Redhat based] (Qt5, POSIX), QNX

Mathematics

Computational Geometry, Discrete Differential Geometry, Linear Algebra, Exterior Calculus

Tools

Visual Studio, Momentics, Eclipse, CMake, Git, SVN, JIRA, Blender, MeshLab

Certifications

Security

Top Secret (TS) with Single Scope Background Investigation (SSBI)

US Census Bureau Special Sworn Status (SSS)

Technical

CompTIA A+

CompTIA Network+

VTSP Accreditation (VMware)