Josef Andrew Graus

Senior AI 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
George Mason University

2012 – 2014
M.Sc. Computer Science
George Mason University

2012 – 2014
Computer Games Technology Graduate Certificate
George Mason University

2008 – 2012
B.Sc. Computer Science
George Mason University

2008 – 2012
B.Sc. Mathematics
George Mason University

Experience

01/2019 – Present
Senior AI Software Engineer
Knexus Research Corporation

- Currently developing applications for differential privacy techniques related to permanently anonymizing survey information while preserving statistical integrity.

01/2013 – 12/2018
Senior Software Engineer
Nikon Metrology, Inc.

- 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.

05/2007 – 08/2010 **Programmer**
Merlin Simulation, Inc.

- Designed various realistic flight simulator models for subsequent use in Federal Aviation Administration (FAA)-certified flight simulators.
- Integrated flight physics libraries produced by in-house physicist colleagues.

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)
Technical	CompTIA A+ CompTIA Network+ VTSP Accreditation (VMware)