

Nicolas C. Ward

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EXPERIENCE

8/2016 – present **Amazon Web Services**, Amazon GuardDuty, External Security Services, Seattle, WA

As a Technical Lead and Senior Software Development Engineer on the Amazon GuardDuty service team, my responsibilities include leading engineering teams that design and build major new threat detection features, advising product leadership, and mentoring more junior engineers. I work regularly with other service teams to define complex security integrations. My writing is recognized as exemplary. I dive deep into unexplored problem spaces and create solutions.

- As part of the original GuardDuty service launch team, implemented various security telemetry processing components running at cloud scale (Java, Scala)
- Lead the delivery and implementation of GuardDuty's first major new feature, GuardDuty S3 Protection (Java, Scala)
- Lead the delivery of new agent-based capabilities powering GuardDuty EKS Runtime Protection (Java, Rust, Typescript)
- As part of an oncall rotation, quickly mitigate and root cause customer-impacting service issues

8/2005 – 8/2016 **Raytheon BBN Technologies**, Text Group, Speech, Language & Multimedia Business Unit, Cambridge, MA

As a Staff Scientist in the Text Group, my responsibilities included developing, evaluating, and maintaining a wide variety of text extraction components, primarily for government research contract customers.

- Maintained and updated core text processing codebase and extended systems to new domain-specific input data, including scientific entity detection and mammography medical annotation (C++, Java, Python, C#)
- Developed generic text processing pipeline for use with various multiprocessor cluster queueing software; system used by several other department projects (Python)

6/2003 – 5/2005 **Swarthmore College**, Swarthmore Robotics Team, Swarthmore, PA

- Worked for Dr. Bruce A. Maxwell, now at Northeastern University
- Developed two successive versions of a robot teleoperation interface and telemetry visualizer for multiple wheeled robots
- Successfully used interfaces in Urban Search & Rescue (USR) competitions at American Association for Artificial Intelligence (AAAI) conferences; team placed 2nd at AAAI '03 and 1st at AAAI '04

2/2003 – 5/2005 **Swarthmore College**, Swarthmore College Computer Society, Swarthmore, PA

- Volunteered as a system administrator and treasurer for a student technology group
- Maintained independent servers and computer lab providing services to students

EDUCATION

9/2007 – 5/2013 **Harvard University Graduate School of Arts and Sciences**, Cambridge, MA

- Received an S.M. in Computer Science as a part-time student
- GPA: 3.29/4.0 Cumulative
- Relevant Coursework: Machine Learning, Theory of Computation, Natural Language Processing, Numerical Methods, Database Systems, Massively Parallel Programming, Biologically Inspired Systems

9/2001 – 5/2005 **Swarthmore College**, Swarthmore, PA

- Received a B.S. in Engineering and a B.A. in Computer Science
- GPA: 3.62/4.0 Cumulative, 3.67/4.0 Engineering, 3.81/4.0 Computer Science
- Relevant Coursework: Computer Graphics, Computer Vision, Computer Security, Computer Architecture, Computational Linguistics, Natural Language Processing, Artificial Intelligence, Theory of Computation, Digital Logic
- Awards: Sigma Xi membership (2003), Tau Beta Pi membership (2003)

PUBLICATIONS

Freedman, M., Ramshaw, L., Boschee, E., Gabbard, R., Kratkiewicz, G., Ward, N., & Weischedel, R. (2011, July). Extreme extraction: machine reading in a week. In Proceedings of the Conference on Empirical Methods in Natural Language Processing (pp. 1437-1446). Association for Computational Linguistics.

Maxwell, B. A., Ward, N., & Heckel, F. (2004). A configurable interface and software architecture for robot rescue. In Sixteenth conference on innovative applications of artificial intelligence, San Jose, CA, USA (pp. 25-29).

Maxwell, B. A., Ward, N., & Heckel, F. (2004, April). Game-based design of human-robot interfaces for urban search and rescue. In Proceedings of the CHI 2004 Conference on Human Factors in Computing Systems.

Maxwell, B. A., Ward, N., & Heckel, F. (2003). A Human-Robot Interface for Urban Search and Rescue. AAAI Mobile Robot Competition, 3, 01.

SKILLS & INTERESTS

General Skills

Capable of learning new technical and non-technical skills very quickly, especially related to resurrecting and maintaining abandoned codebases, and explaining and teaching those skills to others. Experienced with converting abstract design requirements into concrete implementations in a wide variety of programming languages and environments. Delivered multiple cloud-scale processing components. Excellent analytical writing ability.

Computer Languages

Java, Scala, Python, TypeScript, Rust, C++, C, C#, Perl, Objective-C, Bash, HTML, CSS, JavaScript, JSON

GitHub

<https://github.com/UltraNurd> - Various class projects and open source contributions

Interests

Architecture, tabletop games, linguistics, open-source software, reading, science fiction, Star Trek, video games