# Robert Edman


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## Summary of Qualifications

- Recent PhD in Mathematics with a BSci in computer science.
- 6 years of industry experience on R&D projects for NASA, DARPA, and US based technology companies and Federal agencies.
- Demonstrated successful at solving diverse, real world problems with 80% of projects leading to follow on funding and work.
- Teaching background and experience clearly and effectively communicating hard technical ideas to a general audience.

## Employment History

**2009 - Present** Adventium Labs, 111 3rd Ave S, Minneapolis, MN 55401
*Research Scientist*

Independently formulated and implemented mathematical solutions to technical problems in planning and computer security, with 80% of projects receiving follow on funding. Provided planning and direction for technical tasks. Authored technical reports and academic papers based on results. (Adventium Labs is a Minneapolis based contract research and development company funded by NASA, DARPA, other Federal agencies, and by other large US based technology companies.)

**2011- Present** University of Minnesota (MathCEP) Minneapolis, MN 55455
*Workshop Leader/Instructor*

Communicated challenging technical material to workshops of 12-16 talented in highly selective accelerated honors calculus program for high schools. Created classroom activities, wrote and presented lectures, wrote and graded exams and homework. Mentored students.

**2004- 2011** University of Minnesota (Department of Mathematics), Minneapolis, MN
*Graduate Teaching Assistant*

Interacted weekly with students in University math classes, developed classroom activities, grading homework and exams. Classes taught include: Calculus 1, Calculus 2, Multivariable Calculus, Differential Equations, College Algebra, Sequences and Series, and Precalculus.

## Education

**2015** PhD, Mathematics – University of Minnesota

*Advisor: Victor Reiner*
Thesis: *Diameter and Coherence of Monotone Path Graphs.*

**2014** MS, Mathematics – University of Minnesota

Advisor: *Ezra Miller (Duke University)*
Thesis: $\mathcal{A}$*-Hypergeometric Series*

**2003** BS, Mathematics – Michigan Technological University

*Magna Cum Laude*

**2003** BS, Computer Science – Michigan Technological University

*Cum Laude*

**–** Advanced Additional Coursework

*Statistical Mechanics: Algorithms and Computations (2014 – Coursera/École normale supérieure)*
*Behavioral Genetics (2014 – Coursera/University of Minnesota)*

## Awards and Honors

**2014** Adventium Distinguished Performer – Award for work on DARPA program Vetting Commodity IT Software and Firmware) planning program.

**2012** Adventium Distinguished Performer – Award for work on Navy MiCart (Mixed Criticality, Real-Time Virtualization Support) scheduling program.

**2004** Math in Moscow Scholarship – NSF/AMS Scholarship undergraduate students to attend Math in Moscow Program for talented Math and Computer Science students.

**2003** Math in Moscow Scholarship – (same as above).

**2002** MASS program – Scholarship for Undergraduate research and semester long advanced undergraduate coursework in mathematics at Penn State University.

**2002** National Scholars Program – Merit-based scholarship for Michigan Technological University awarded to non-Michigan residents.

## Technical Skills

**Programming Languages**
*C and C++* – GDB, gcc, cpp, STL, unix development processes.
*Java* – Application development in eclipse, including eclipse plugin development
*Python* – Scientific Computing using pylab, scipy, numpy, graphviz, etc...; interfaces, rapid prototyping, and proof of concept.
*perl* – parse, extract, and structure weakly formatted data.
*Parallel Programming* – OpenMP, MPI, UPC.
*Mathematical Software* – Mathematica, Matlab/Octave, Sage, Gap, Macaulay.
*Database managment and structuring* – Postgresql, mysql, sqlite3,noSQL; setup, structuring, and administration.
*Constraint Reasoning Software* – SMT (SMT2.0, Yices, z3), CSP (MiniZinc, JaCoP).

**Miscellaneous**
*Linux/Unix* – Extensive use of unix based operating systems.
*LaTeX* – Mathematical presentation software, including papers and presentations.
*git,svn* – Source version control.

## References

*Available on Request*