

Philippe Demontigny

phdemontigny@gmail.com | 226.338.9914

Website: phdemontigny.github.io

EDUCATION

U. OF WATERLOO

MASTERS IN COMPUTER SCIENCE

Sept 2014-Present | Waterloo, ON

Cum. GPA: 93.25 / 100.0

WILLIAMS COLLEGE

BA IN MATHEMATICS & STATISTICS, WITH HONORS (THESIS OPTION)

Grad. June 2014 | Williamstown, MA

Magna Cum Laude

Thesis Adviser: Bill Lenhart

Dean's List (All Semesters)

Phi Beta Kappa Honor Society

Sigma Xi Science Research Society

Cum. GPA: 3.82 / 4.0

COURSEWORK

GRADUATE

Algorithms for Shortest Paths

Applied Machine Learning

Cryptography/Network Security

Computer Graphics

UNDERGRADUATE

COMPUTER SCIENCE

Data Structures

Artificial Intelligence

Algorithm Design & Analysis

Theory of Computation

Programming Languages

Creating Games

MATHEMATICS & STATISTICS

Linear Algebra

Linear Programming

Regression & Forecasting

Bayesian Analysis

Probability

Graph/Game Theory

Teaching Mathematics

SKILLS

PROGRAMMING

Java • Javascript • Python • \LaTeX

C++ • OpenGL • HTML • CSS

R • Mathematica

LANGUAGES

English • Japanese

RESEARCH

U. OF WATERLOO ALGORITHMS LAB | RESEARCH ASSISTANT

Sept 2014 – Present | Adviser: Therese Biedl

- Studying Computational Geometry with a focus on Graph Drawing. Topics include layered representations of trees, NP-hard problems, and lower bounds.

SMALL REU PROGRAM | STUDENT RESEARCHER

June 2013 – Aug 2013 | Adviser: Steven J. Miller

- Studied generalizations of Zeckendorf's theorem and other integer representations using recurrence relations.

PUBLICATIONS FROM SMALL 2014:

- P. Demontigny, T. Do, A. Kulkarni, S.J. Miller, D. Moon, U. Varma. Generalizing Zeckendorf's Theorem to f -decompositions. *Journal of Number Theory*, vol. 141, pp. 136-158, 2014.
- P. Demontigny, T. Do, A. Kulkarni, S.J. Miller, U. Varma. A generalization of Fibonacci far-difference representations and Gaussian behavior. *Fibonacci Quarterly*, vol. 52, pp. 247-280, 2014.

TEACHING

U. OF WATERLOO | TEACHING ASSISTANT

Sep 2014 - Present | Waterloo, ON

- CS 234: Data Types and Structures (Spring 2015/Fall 2014)
- CS 136: Algorithm Design and Data Abstraction (Winter 2015)

WILLIAMS COLLEGE | TEACHING ASSISTANT

Sept 2011 - May 2014 | Williamstown, MA

- STAT 101: Elementary Statistics & Data Analysis (Spring 2014/Fall 2011)
- MATH 150: Multivariable Calculus (Fall 2013/Spring 2012)
- CSCI 107: Creating Games (Spring 2013)
- MATH 130: Calculus I (Fall 2012)

RECENT PROJECTS

THE WEEPING FOREST | APRIL 2015

- A horror-survival game inspired by "Slender: The Eight Pages" and Dr. Who. Created using JavaScript, WebGL, and THREE.js.

C++ RAY TRACER | MARCH 2015

- A simple ray tracer implementation in C++ that draws scenes as specified in Lua files. A full list of features can be found on my website.

MIND CRUSH | JAN 2015

- A game that combines the difficulty of Set with the addictive gameplay of Candy Crush. Created using Javascript and Codeheart.js.

MAGIC THE GATHERING PRICE PREDICTOR | DEC 2014

- Uses Python scikit-learn decision tree classifiers to predict the price of MTG singles based on combinations of card attributes.