

Maksim Trifunovski

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Education

Wesleyan University

Middletown, CT

BACHELOR OF ARTS, MAJORS: COMPUTER SCIENCE AND MATHEMATICS, GPA 4.00/4.00

May 2017

- Dean's List: Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015, Spring 2016

Relevant Coursework

Computer Science

Algorithms and Complexity, Data Structures, Distributed Systems, Design of Programming Languages, Computer Structure and Organization, Data Mining in R, Automated Theorem Proving

Mathematics

Discrete Mathematics, Vectors and Matrices, Number Theory, Fundamentals of Analysis, Mathematical Logic

Experience

Undergraduate Research, Computer Science Department (Prof. Daniel R. Licata)

Middletown, CT

<INTRINSIC VERIFICATION OF A REGULAR EXPRESSION MATCHER> AND <A PROOF ASSISTANT FOR A DIRECTED TYPE THEORY>

May 2015 - PRESENT

- Wrote two Regular Expression Matchers in Agda, a higher-order function continuation one, and a defunctionalized stack based one.
- Intrinsically proved the soundness of the matchers, and then proved their completeness.
- Building a proof assistant which implements a Directed Type Theory based on Category Theory and Linear Logic in OCaml.

Course Assistant, Wesleyan University

Middletown, CT

CA FOR IMPERATIVE PROGRAMMING, DATA STRUCTURES, DESIGN OF PROGRAMMING LANGUAGES, PROGRAMS AND PROOFS

January 2014 - PRESENT

- Design and grade homework and lab problems in C, SML and Agda.
- Hold lab and help sessions where students can get additional help with concepts they do not understand.

Undergraduate Research, Computer Science Department (Prof. Norman Danner)

Middletown, CT

HOW CLIENT MODELS AFFECT RESULTS FROM SHADOW SIMULATIONS OF TOR

July 2015

- Built a Tor simulation model in XML for Shadow by analyzing previous models and TorPerf data.
- Designed Python scripts to parse and analyze the data from the simulation as well as data from TorPerf.
- Wrote a Python program to draw comparison histograms in order to improve the model until it matches actual TorPerf data.

Instructional Media Services

Middletown, CT

MEDIA SUPPORT TECHNICIAN AND PROGRAMMER

October 2013 - May 2015

- Set up, tested and configured networks, desktops, projectors and printers on the Wesleyan campus.
- Designed tests and fixed bugs for the "Commander" project in Ruby, responsible for touch-screen interfaces in classrooms.

Projects

THEOREM PROVERS FOR PROPOSITIONAL AND FIRST-ORDER LOGIC IN OCAML AND SML

April 2016

- Built a first-order logic theorem prover that used resolution as its method of proof and displayed each step of the procedure.
- Built a propositional logic theorem prover that used the tableau method and built bussproofs trees of the proofs in LaTeX.

ENCRYPTOR APP

July 2015

- Built a Java application with a GUI interface that encrypted small files like pictures and text documents.
- The encryption used a modified version of the Vigenère cipher on each byte of the file.

FOODY CALL - A WEB FOOD ORDERING APP

September 2014

- Built the backend for a food ordering app and was awarded 1st place at WesHack 2014.
- Processed SMS messages using Twilio and used MongoDB to store the menus.

DOTA 2 STATS TRACKER

July 2013

- Built a program in C++ that tracked the stats of a Dota 2 player for each hero played.
- An encrypted data file was stored for each player and was used to display a detailed analysis of the performance of the player.

Skills

Programming

C++, Java, SML, OCaml, Python, Agda, R, LaTeX

Languages

English (native), Macedonian (native), Croatian (fluent), Serbian (fluent)

Written work

Paper on the verification of a regular expression matching algorithm. Attended ICFP '16 in Nara, Japan.

Honors & Awards

2014

1st Place, Sherman Prize for best Freshman Mathematician at Wesleyan

Middletown, CT

2010-2012

1st Place, International Mathematical Kangaroo

Skopje, Macedonia

2010-2012

Silver Medals, Macedonian Math and Informatics Olympiads

Skopje, Macedonia