

# Sophie Koffler

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## EDUCATION

University of Massachusetts Amherst

*College of Information and Computer Sciences*

Master's in Computer Science, GPA 3.735

May 2018

Bachelor's in Computer Science and Mathematics, Cum Laude

May 2004

Bay State Fellowship: Tuition-free Master's degree with small assistantship.

Relevant Coursework: Advanced Algorithms, Computation Theory, Logic of Computer Science,

Advanced Information Assurance, Information Retrieval, Operating Systems, Artificial Intelligence

## TECHNICAL SKILLS:

**Programming Languages:** Java, SQL, Python, CGI, C++, HTML5, CSS3, XML, JavaScript, Flash, Scheme

**Operating Systems:** Windows 98/2000/XP/Vista/7/10, UNIX

**Software:** Microsoft Office, GIMP, Photoshop, Visio, GeoGebra, nauty, MAGMA, LaTeX, Access

**Development Tools:** Eclipse, Maven, CVS/ANT, Git, Node.js

**Oracle Certified Professional:** MySQL 5.0 Developer

Oct 2011

## PROFESSIONAL EXPERIENCE

**University of Massachusetts Amherst**

Amherst, MA

Teaching Assistant: Programming with Data Structures

Jan 2017 - May 2017

- Assisted students with course material and helped them debug their programming projects during weekly office hours.
- Led four laboratory sections a week, outlining the assignment, covering areas of difficulty and answering questions. Edited weekly lab materials before provided students with timely access.
- Proctored exams to help answer student's questions. Graded exams to allow the professor to focus on other responsibilities.

Graduate Research Assistant under Professor Neil Immerman

May 2017-Jan 2018

- Searching for a polynomial time language capable of capturing graph isomorphism, read seminal and current research papers on topics including descriptive complexity and graph isomorphism.
- Prepared weekly presentation of material covered containing proofs and examples, presented at the blackboard to practice teaching skills.

Teaching Assistant and Grader: Introduction to Programming with Python

Jan 2016-May 2017

- Held office hours and assisted students in debugging their programs/learning concepts.
- Graded programming projects, homework and exams.
- Proctored exams, verified rubrics, and developed homework questions.

Teaching Assistant: Information Systems

Jan 2006-May 2006

- Held office hours and graded papers and exams.

Computer Laboratory Consultant for the EDLAB

Sept 2005- May 2006

- Provided consultation to lab users for usage of equipment and software.

**SLK Designs: Handcrafted Artisan Jewelry**

2007-2015

Sole Proprietor, Jewelry Designer, Artisan, Photographer, Office Manager and Sales Person

- Specialized in off the loom bead weaving. All work consisting of one of a kind, original designs.

**Stamford Land Conservation Trust, Stamford, CT**

2009-2015

Database Administrator/Developer

- Redesigned database schema and developed a library of queries to assist with a targeted fundraising campaign aimed at increasing annual revenue.
- Generated contribution responses and mailing lists used for fundraising purposes and mailing newsletters to members. Performed data entry.
- Migrated the database from Access 2003 to Access 2007.

Director/Secretary

- Chaired the membership committee, directed accreditation process with the LTA (Land Trust Alliance) and sat on various committees.
- Attended board meetings and recorded, typed and distributed the minutes.
- Edited the minutes as determined during review and uploaded correct versions to FTP server.
- Contributed to stewardship of properties including monitoring parcels for encroachment and dumping. Participated in annual cleanup of each parcel.
- Digitized organizational records to serve as backup of original documents as required by the LTA.

**PROJECTS**

The Security of Biometric Authentication

Spring 2018

- Wrote a survey paper for Advanced Information Assurance on the security of biometric authentication in smartphones.
- Discussed fingerprint sensors, facial recognition and behavioral biometrics including multi-touch gestures.

Research Project on Graph Canonization

Summer 2016

- Implemented the 1<sup>st</sup> and 2<sup>nd</sup> dimensional Weisfeiler-Leman methods in Python.
- Built a web application that allowed users to upload graphs and run either method on them, presenting the user with a visualization of the output at each stage of the algorithm.
- Learned how to build a web application, program the front and back end, and write CGI scripts which allowed me to create dynamic web content and access the web server.

**Volunteer Experience****Save the Children US**

Internet Communications and Marketing Intern

Summer 2012

- Updated web content including the generation and modification of html forms pertaining to specific fundraising campaigns. Assisted with web performance optimization.

**Project Return**

Spring 2013

- Trained technologically illiterate executive on basic computer usage: Outlook, Gmail, Facebook, and LinkedIn.
- Suggested styling and layout updates to the organization's website.

**Fairfield Public Library**

Spring 2013

#### Computer Lab Monitor

- Assisted patrons with computer use including issues related to logging on, using software and accessing the printer station.

#### **Outreach**

Women in Engineering and Computing Career Day

Fall 2016

- Mentored high school students during what was a first exposure to programming for many.
- Guided students through a series of MIT Scratch exercises of increasing difficulty.