COLE TYLER NELSON

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4229 Computer Sciences
Madison, WI 53706

EDUCATION

BS	University of Wisconsin-Platteville, Software Engineering	May 2020
	Engineering Management Emphasis, Mathematics Minor	3.96 GPA
MS	University of Wisconsin-Madison, Computer Sciences	May 2023

INTERESTS

Computer Science Education, Application Security, and Human-Computer Interaction

BACKGROUND

Area	Expertise
Languages	TypeScript, JavaScript, Java, C#, Python, HTML, CSS, SQL
Technologies	NodeJS, Angular, React, React Native, Express, Pandas, Spring, Docker, SonarQube, Bamboo, Jenkins, DialogFlow

CERTIFICATIONS

Information Systems Security Officer, Level II	2020 - 2023
Microsoft Certified Innovative Educator	2020
Google Certified Educator	2020

LINKS

Resource	Link
Personal Website	https://www.coletnelson.us/
Personal Repositories	https://bitbucket.org/ctnelson1997/
Research Papers	https://bitbucket.org/ctnelson1997/website-papers/
LinkedIn Page	https://www.linkedin.com/in/ctnelson1997/

RELEVANT COURSEWORK (UNIVERSITY OF WISCONSIN-MADISON)

Coursework

CS402: Introducing Comp Sci to K-12
CS502: Theory in Comp Sci Ed
CS514: Intro to Numerical Analysis
CS524: Intro to Optimization
CS536: Intro to Langs & Compilers
CS540: Intro to Artificial Intelligence

CI803: Computational Research Methods

CS703: Program Verification & Synthesis
CS760: Machine Learning
CS770: Human-Computer Interaction
CS782: Adv. Topics in Cybersecurity
CS839: Adv. Topics in HCI Systems

CI900: Adv. Topics in Education

RELEVANT COURSEWORK (UNIVERSITY OF WISCONSIN-PLATTEVILLE)

Computer Science

CS1430: Programming in C++
CS2430: Object-Oriented Programming I
CS2630: Object-Oriented Programming & II
CS3230: Computer Architecture & OS
CS3520: Programming Language Structures
CS3630: Database Design & Implementation
CS3830: Data Comm & Computer Networks
CS3840: Introduction to Computer Security

Software Engineering

SE2730: Introduction to Software Engineering
SE3330: Intermediate Software Engineering
SE3430: Object-Oriented Analysis & Design
SE3730: Software Quality
SE3860: Software Maintenance & Re-Engineering
SE4130: Real-Time Embedded Systems
SE4110: Software Engineering Seminar
SE4330: Software Engineering Projects I
SE4730: Software Engineering Projects II

Industrial Engineering

IE3530: Operations Research I
IE4430: Quality Engineering
IE4730: Engineering Management

Education

ED1230: Introduction to Education
ED2010: Educational Media Theory
ED4020: Educational Media Appl.

Mathematics

MATH2640: Calculus I
MATH2740: Calculus II
MATH2840: Calculus III
MATH2730: Discrete Mathematics
MATH3230: Linear Algebra
MATH3630: Diff. Equations I
MATH4030: Statistical Methods

RESEARCH PAPERS

Code Quality of CS Students in CS571: Building User Interfaces	2023
Trusting the Password Manager: Exploring an Alternative for the Wary User	2021
Snoot: Sniffing out Program Repairs as Feedback in Auto Grading Systems	2020
Striking Similarities Between Software Quality and Education	2019
Introducing Novice Programmers to Physical-Computing Systems	2019
Applications of the SOLO Taxonomy to Comp Sci. & Soft. Eng. Education	2019
Managing Safe Traffic Flow in Grant County	2018
SPOT: Abstraction in Metaprogramming	2017

All papers are available at https://bitbucket.org/ctnelson1997/website-papers/.

WORK EXPERIENCE

University of Wisconsin-Madison   *Instructor*   Spring 2022 - Present
- Development, delivery, organization, and collection of course content including lectures, course webpages, web servers, assignments, homeworks, quizzes, and exams
- Assisting of students in one-on-one office hours and online forums

University of Wisconsin-Madison   *Teaching Assistant*   Fall 2020 – Fall 2021
- Development of assistive tools and software to aid instruction
- Preparation and assessment of assignments, homeworks, quizzes, and exams
- Assisting of students in group code clinics and one-on-one office hours

Nelnet   *Application Security Intern*   Summer of 2020 – Summer of 2023
- Development of security tools to improve application security posture using Angular, Java, Spring, C#, .NET, TypeScript, Python, MSSQL, SQLITE, Docker, and AWS.
- Evangelization of security-first and "shift left" mindset for developers

Kohl's Innovation Center   *Software Engineering Intern*   Summer of 2019
- Development of boundary service to process credit cards using Java and Spring

Nelnet   *Software Engineering Intern*   Summer of 2018
- Development of internal web applications using Angular, Java, Spring, and MSSQL

University of Wisconsin-Platteville   *CS Undergraduate Researcher*   Summer of 2017
- Development of a domain-specific language, SPOT, for **S**pecifying **PrO**gram **T**ransformations of C and C++ programs

University of Wisconsin-Platteville   *CS Academic Assistant*   Fall 2017 – Spring 2020
- Assisting of introductory programming students in 1-1 and drop-in lab settings
- Grading of introductory programming students' homeworks, programs, and quizzes

Graduate Christian Fellowship   Fall 2022 – Spring 2023
A Christian community of graduate and professional students.

    UW-Madison Leadership Team   Fall 2022 – Spring 2023

High Point Church Kids Ministry   Fall 2022
A Sunday School program for children K-4.

    K-1 Small Group Leader   Fall 2022

Association for Computing Machinery   Fall 2016 – Spring 2020
The Association for Computing Machinery is the world's premier organization for advancing the world of scientific computing.

    UW-Platteville Chapter President   Fall 2017 – Spring 2019

Circle K International   Fall 2016 – Spring 2020
Circle K International is the world's largest student-led collegiate service organization with more than 13,000 members across 13 countries worldwide.

    Wisconsin-Upper Michigan Governor   Spring 2019 – Spring 2020
    Wisconsin-Upper Michigan Awards Chair   Spring 2018 – Spring 2019
    UW-Platteville Chapter Vice President   Spring 2018 – Spring 2019
    UW-Platteville Chapter Bulletin Editor   Spring 2017 – Spring 2018
    UW-Platteville Chapter Service Chair   Fall 2016 – Spring 2017

Chess Club   Spring 2019 – Spring 2020
Chess Club is UW-Platteville's recreational chess club.

    UW-Platteville Chapter Co-Founder   Spring 2019 – Spring 2020

Phi Kappa Phi   Fall 2018 – Spring 2020

Student Senate   Fall 2016 – Fall 2017

HONORS AND AWARDS

Description	Awarded
University of Wisconsin-Madison CS Outstanding Teaching Assistant	2021
University of Wisconsin-Platteville Chancellor's Medallion	2020
Circle K International Distinguished Governor Award	2020
University of Wisconsin-Platteville Excellence in Leadership	2019
Circle K International Michael J. Pierski Golden Gavel	2019
Phi Kappa Phi Academic Excellence Scholarship	2018

PRESENTATIONS AND WORKSHOPS

Computer Science Workshops
- "Exploring Computer Science" *UW-Madison Grandparents Uni*, Summer 2023.
- "Cybersecurity Basics" *Badgerland Girl Scouts*, Spring 2023.
- "Coding For Good" *Badgerland Girl Scouts*, Fall 2022.
- "Exploring Computer Science" *UW-Madison Grandparents Uni*, Summer 2022.
- "Hour of Code" *UW-Platteville Computer Science,* Fall 2018 & 2019.
- "Micro:Bits, Mega:Fun, &&++" *UW-Platteville EMS Expo*, Spring 2019.
- "Gadgets Galore" *UW-Platteville EMS Expo*, Spring 2018.

Poster Presentation, "SPOT: A Domain-Specific Language for Specifying Source-to-Source Transformations"
- *Pioneer Creative Activities and Research Day*, Spring 2018.
- *UW-System Symposium*, Spring 2018.
- *Research in the Rotunda*, Spring 2018.
- *UW-Platteville Master of Computer Science Course*, Spring 2017.

Formal Presentation, "Applications of the SOLO Taxonomy in Computer Science Education" *UW-Platteville Senior Seminar*, Fall 2019.

Computer Science After-School Programs
- Randall Elementary School, *Madison, WI*, Fall 2020.
- Westview Elementary School, *Platteville, WI*, Fall 2019 – Spring 2020.

REFERENCES

Dr. Bilge Mutlu, Professor, Director of People & Robots Lab
Department of Computer Sciences | UW-Madison
Email: bilge@cs.wisc.edu

Dr. Rahul Chatterjee, Assistant Professor
Department of Computer Sciences | UW-Madison
Email: rahul.chatterjee@wisc.edu

Andrew Kuemmel, Teaching Faculty, CS Advisor for the AP College Board
Department of Computer Sciences | UW-Madison
Email: kuemmel@cs.wisc.edu

Dr. Douglas Selent, Assistant Professor & Software Engineering Program Coordinator
Department of Computer Science & Software Engineering | UW-Platteville
Email: selentd@uwplatt.edu