COLE TYLER NELSON

ctnelson2@wisc.edu
ctnelson1997@gmail.com
www.coletnelson.us

(920) 917-2261
505 Eagle Heights Dr. Unit I
Madison, WI 53705

EDUCATION

BS	University of Wisconsin-Platteville, Software Engineering Engineering Management Emphasis, Mathematics Minor	May 2020 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, 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/

INSTRUCTOR EVALUATIONS (UNIVERSITY OF WISCONSIN-MADISON)

Data collected from anonymous surveys sent to all students enrolled in CS courses numbered 000-599 (primarily undergraduate) at the end of the semester.

Fall 2022 – CS571 | Building User Interfaces (1 Section, 50 Students)

Criteria	Cole	CS000-599 μ, σ	Out Of
Participation Rate	68%	$\mu = 51\%, \sigma = 17\%$	100%
How difficult was the course?	3.8	$\mu = 4.3, \sigma = 0.9$	7
How often did the instructor create a positive, engaging learning environment?	6.8	$\mu = 5.9, \sigma = 0.6$	7
How valuable was time spent in attending lecture to your learning?	5.8	$\mu = 4.9, \sigma = 0.7$	7
How often was the instructor available to answer questions and concerns?	6.7	$\mu = 5.9, \sigma = 0.5$	7
How likely are you to recommend this instructor to fellow students?	6.3	$\mu = 5.2, \sigma = 1.0$	7
To what extent did the instructor meet your expectations for the quality of instruction at UW-Madison?	6.0	$\mu = 5.1, \sigma = 0.9$	7

Spring 2022 – CS220 | Data Programming I (1 Section, 130 Students)

Criteria	Cole	CS000-599 μ, σ	Out Of
Participation Rate	69%	$\mu = 48\%, \sigma = 17\%$	100%
How difficult was the course?	4.4	$\mu = 4.2, \sigma = 1.2$	7
How often did the instructor create a positive, engaging learning environment?	6.7	$\mu = 6.1, \sigma = 0.5$	7
How valuable was time spent in attending lecture to your learning?	5.4	$\mu = 4.9, \sigma = 0.8$	7
How often was the instructor available to answer questions and concerns?	6.4	$\mu = 6.0, \sigma = 0.4$	7
How likely are you to recommend this instructor to fellow students?	6.4	$\mu = 5.6, \sigma = 0.8$	7
To what extent did the instructor meet your expectations for the quality of instruction at UW-Madison?	6.2	$\mu = 5.4, \sigma = 0.7$	7

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

Application Security Hygiene of CS Students in Web, Mobile, & Voice Apps	2022
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 *Graduate Lecturer* Spring 2021 - 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 - Present

- 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

ORGANIZATIONS & INVOLVEMENT

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

UW-Madison Leadership Team Fall 2022 – Present

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

K-1 Small Group Leader Fall 2022 – Present

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

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 Workshops

- "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.

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

Andrew Kuemmel, Lecturer, 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

Donna Gavin, Senior Lecturer
Department of Computer Science & Software Engineering | UW-Platteville
Email: gavind@uwplatt.edu