Emma Cinatl

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Education

Clemson University—M.S. in Mathematical Sciences (GPA: 4.00/4), focus in Scientific Computation, Dec. 2018
Coursework: Data Structures, Data Analysis, Introduction to Scientific Computing, Advanced Numerical Analysis, Topics in Cryptography, Abstract Algebra I and II, Linear Programming, Linear Analysis, Matrix Analysis, Stochastic Processes, Selected Topics in Computational Mathematics, Finite Element Method
Research (ongoing): Alternate models of linear elasticity using the scientific library **dealii** in **C++** on **Linux**

Grove City College—B.S. in Mathematics (Major GPA: 3.95/4, Overall GPA: 3.89/4), Summa Cum Laude, 2016
Minors: Computer Science and Music (voice)

Programming Languages and Skills

C++ • Python 3 • Matlab • Linux • git • Java • LaTeX • Scala • Mathematica • MySQL • Mercurial • Scrum • dealii

Internships and Research

Cryptographer (Intern), Noblis, Reston, VA   **6/18-8/18**
- Refactored outdated encryption-breaking code in **Python**, and researched adapting it to a different protocol
- Created detailed technical reports elucidating two **side-channel attacks**
- Presented my research to Department of Justice stakeholders

Cryptographer (Intern), Noblis, Reston, VA   **6/17-8/17**
- Deciphered mathematical papers on **factoring algorithms** rooted in graduate-level abstract algebra, and explained the essentials to teammates lacking a graduate mathematics background
- Explored and troubleshooted time- and money-saving alterations to code in **Python** that factors large integers
- Developed my **Linux** and **git** skills, and taught my team how to use git

Researcher, Research Experience for Undergraduates, Kent State University Mathematics Dept., OH   **6/15-8/15**
- Carefully evaluated and tested teammates' ideas, and contributed inventive mathematical hypotheses
- Created and delivered weekly presentations on the project's progress with my research team
- Implemented tests for hypotheses in **C++** and **Mathematica**

Researcher, Summer Research Program, Grove City College Computer Science Dept., PA   **6/14-8/14**
- Studied, created, and implemented techniques to convert raster images to vector images for use by a CNC router
- Created **C++** software to identify crucial characteristics of images with my research partner
- Creatively tackled the problem of fitting splines to points with my research partner
- Utilized an organized product development strategy (**Scrum**)

Intern, Applied Research Laboratory, Pennsylvania State University, State College, PA   **6/13-8/13**
- Implemented **A*** in **Java** to be used as part of a ship's navigation system, as well as other search algorithms
- Rapidly self-taught the **Java** programming language and senior-level coursework in Graph Theory

Teaching Experience

Graduate Teacher of Record, Precalculus and Introductory Calculus, Clemson University   **8/18-present**
- Taught **differentiation** and **precalculus**, including functions, graphing, trigonometry, and limits
- Meticulously prepared and delivered **lecture** notes, filling in material absent from the given textbook
- Assisted in creating and proofreading tests

Graduate Teacher of Record, Business Calculus II, Clemson University   1/18-5/18
- Taught **integration** and **multivariate calculus**, with applications in business, **economics**, and **probability**
- Carefully designed assignments to meet course objectives, and provided feedback on them
- Integrated lecturing with **active learning** through student whiteboard activities, individual activities, student participation during lecture, and other group activities

Graduate Teacher of Record, Business Calculus I, Clemson University   8/17-12/17
- Taught **mathematical model**s and **differentiation**, with applications including **marginal analysis**
- Motivated and assisted students lacking mathematical backgrounds and interests
- Created an accepting and welcoming learning environment, and developed rapport with the students

TEACHING ASSISTANT POSITIONS
Teaching Assistant, Calculus I, Clemson University Mathematical Sciences Department   1/17-5/17
Teaching Assistant, College Algebra, Clemson University Mathematical Sciences Department   8/16-12/16
Teaching Assistant, Business Calculus, Grove City College Mathematics Department   10/14-12/14
- Clarified and expanded upon course material in the classroom
- Graded homework and quizzes in a timely manner and in accordance with the instructor's specifications

TUTORING POSITIONS
Independent Mathematics Tutor, Clemson University Student Tutoring Program   10/16-12/16
Department-sponsored Mathematics Tutor, Grove City College Mathematics Department   9/13-5/16
Independent Mathematics Tutor, Grove City College Student Tutoring Program   2/14-5/14
- Efficiently prioritized to assist multiple students in a limited time period
- Tailored teaching style to the personalities and abilities of individual students
- Patiently and clearly explained general mathematical concepts and specific mathematical problems to students
- Encouraged a pleasant and supportive learning environment

GRADING POSITIONS
Grader for Calculus I, Grove City College Mathematics Department   1/16-5/16
Grader for Finite Mathematics, Grove City College Mathematics Department   8/15-12/15
Grader for Precalculus, Grove City College Mathematics Department   8/15-12/15
Grader for Computer Programming II (C++), Grove City College Computer Science Department   2/15-5/15
- Communicated precisely and succinctly which work was incorrect and provided explanations/solutions
- Suggested improvements for technically correct but inefficient solutions to increase understanding of the material

Awards and Honors
- Treasurer for the Society of Industrial and Applied Mathematics, Clemson Chapter
- Graduating Student with the Highest Potential in Mathematics Award, Grove City College Mathematics Department
- Grove City College Trustee Academic Scholarship (highest academic scholarship awarded)
- Grove City College's Dean's List (all semesters) with High Distinction (Fall 2012-Fall 2015)
- Grove City College Carpenter Award
- Secretary for Kappa Mu Epsilon National Mathematics Honorary
- Grove City College Presidential Scholarship
- National Merit Finalist
- Additional privately funded merit scholarships
- Commendation for excellence in teaching from the Graduate Coordinator of Clemson University Mathematical Sciences Department