CURRICULUM VITAE

SANTIAGO RODRIGUEZ

Phone: 954-882-1869
Email: srodvasquez@knights.ucf.edu

EDUCATION

BS University of Central Florida (UCF), 3rd year — Aug 2020 – Present
GPA: 3.855 / 4.000

- Major in Computer Science
- Major in Mathematics, Computational Track

HONORS, PROGRAMS, AND AWARDS

McNair Scholars Program — 2022
Federal TRIO program that prepares undergraduate students for doctoral studies through involvement in research and other scholarly activities. McNair participants are members of groups traditionally underrepresented in graduate education and have demonstrated strong academic potential.

National Hispanic Scholarship — 2020
Merit scholarship awarded by the University of Central Florida to entering high school graduates recognized for their outstanding academic performance.

Florida Academic Scholars Award — 2020
Merit scholarship awarded by the Florida Department of Education to Florida high school graduates recognized for their high academic achievement.

RESEARCH EXPERIENCE

University of Central Florida, Department of Mathematics — Jun 2022 – Present
Faculty Mentor: Dr. Alexander Tovbis, Ph.D., Professor, UCF, Department of Mathematics

- Investigated probability distribution of possible maximal amplitudes occurring in finite-gap solutions for the focusing nonlinear Schrödinger equation
- Derived an exact multivariable recurrence relation and asymptotic approximations for calculating the probability distribution
- Draft Notes: https://github.com/unsonnet/papers/blob/main/tovbis-research.pdf
- Area: Probability Theory, Generating Functions, Complex Analysis, Number Theory

University of Central Florida, ENC 1102 Composition II — May 2021 – Jun 2021
Instructor: Professor Ian Kay, M.F.A., Adjunct Professor, UCF, Department of English

- Developed a possible worlds model to account for the apparent knowledge gained when carrying out thought experiments
- Provided theoretical justification for thought experimental knowledge by subsuming it under modal inference
- Paper: https://github.com/unsonnet/papers/blob/main/enc1102-research.pdf
- Area: Modal Logic, Epistemology, Thought Experiments

St. Thomas Aquinas High School (STA), Independent Research Aug 2019 – May 2020
Faculty Mentor: Mrs. Diane Enten, Teacher, STA, Department of Science

- Designed a meta-learning algorithm called "mellow" paired with Dropout to optimize selection of neural network depth and structure during supervised training
- Applied algorithm to train networks for climate forecasting along monthly timescales
- Project repository: https://github.com/unsonnet/mellow
- Area: Machine Learning, Multivariable Calculus, Statistics

St. Thomas Aquinas High School, Independent Research Aug 2018 – May 2019
Faculty Mentor: Mrs. Diane Enten, Teacher, STA, Department of Science

- Designed a supervised-training algorithm inspired by synaptic plasticity models in the brain to train neural networks
- Project repository: https://github.com/unsonnet/Neuroplasticity
- Area: Machine Learning, Neuroscience, Statistics, Delay Difference Equations

WORK EXPERIENCE

UCF Varsity Programming Team Aug 2021 – May 2022
UCF, Department of Computer Science
Supervisor: Professor Arup Guha, M.S., Senior Instructor, UCF, Department of Computer Science

- Competed in local and regional programming contests as part of UCF Sakura
- Placed 15th in the 2021 ACM Southeast USA Regional Contest – Division 1
- Area: Advanced Data Structures, Graph Theory, Computational Complexity Theory

UCF Developmental Programming Team Aug 2020 – May 2021
UCF, Department of Computer Science
Supervisor: Dr. Ali Orooji, Ph.D., Associate Professor, UCF, Department of Computer Science

- Competed in local and regional programming contests as part of UCF Utah Teapot
- Placed 20th in the 2020 ACM Southeast USA Regional Contest
- Area: Advanced Data Structures, Graph Theory, Computational Complexity Theory

RELEVANT COURSEWORK

Mathematics: COT 4210 Discrete Structures II (A), MAA 4226 Advanced Calculus I (A), MAS 4301 Abstract Algebra I (A-), MAS 4302 Abstract Algebra II (A, in progress), MTG 4302 Introduction to Topology (A, in progress), MTG 5253 Intro to Differential Geometry (B), MAP 5336 Ordinary Differential Equations and Applications (B, in progress)

Computer Science: CDA 3103C Computer Logic & Organization (A), COP 3503C Computer Science II (A), COP 4020 Programming Languages I (A), MAP 4384 Numerical Methods for Computational Sciences (B+), COP 4331C Processes of Object-Oriented Software (A), CAP 4630 Artificial Intelligence (A, in progress), EEL 4768 Computer Architecture (A-)

Writing: ENC 1102 Composition II (A), PHI 2010 Introduction to Philosophy (A)

ADDITIONAL INFORMATION

Language: Fluent in English and Spanish
Citizenship: Double citizenship in Colombia and the United States of America

REFERENCES

Dr. Alexander Tovbis, Ph.D., Professor
Department of Mathematics
University of Central Florida
Office: MSB 323
Phone: 407-823-3273
Email: alexander.tovbis@ucf.edu

Dr. Ali Orooji, Ph.D., Associate Professor
Department of Computer Science
University of Central Florida
Office: HEC 345
Phone: 407-823-5660
Email: orooji@eecs.ucf.edu

Professor Arup Guha, M.S., Senior Instructor
Department of Computer Science
University of Central Florida
Office: HEC 240
Phone: 407-823-1062
Email: dmarino@ucf.edu

Mrs. Diane Enten, Teacher
Department of Science
St. Thomas Aquinas High School
Ft. Lauderdale, FL
Email: diane.enten@aquinas-sta.org

Professor Ian Kay, M.F.A., Adjunct Professor
Department of English
University of Central Florida
Phone: 407-823-2295
Email: ian.kay@ucf.edu