

Federico Sorcini

332 E. Fairlawn Dr. • Urbana, IL 61801 • sorcini2@illinois.edu • (781) 640-3665

Education

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Urbana, IL

Doctor of Philosophy in Psychology; Attention and Perception

August 2025-Present

Advisors: Simona Buetti and Alejandro Lleras

Relevant Coursework: Cognitive Neuroscience of Vision; Neural Network Modeling; Statistics

TUFTS UNIVERSITY

Medford, MA

Post-Baccalaureate Certificate in Computer Science

August 2024

Relevant Coursework: Artificial Intelligence; Theory of Computation; Algorithms; Data structures; Discrete Math

COLLEGE OF THE HOLY CROSS

Worcester, MA

Bachelor of Arts in Psychology

May 2020

Relevant Coursework: Cognitive Neuroscience; Psychopathology; Judgement and Decision Making; Cognition and Memory; Calculus I & II; Physics I & II; Biology I, II, & II; Organic Chemistry I & II; Consciousness and Control; Cognition Across Cultures

Experience

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Urbana, IL

PhD Student, Vision Lab

August 2025-Present

- PI: Dr. Simona Buetti and Dr. Alejandro Lleras
- Conducted research in visual attention, visual search, and visual perception
- Design studies investigating the role of real 3D depth in visual attention
- Program visual attention and eye-tracking experiments using PsychoPy, python, ExperimentBuilder, and Pupil Cloud
- Establish new protocols for how to use and incorporate Pupil Labs Neon eye-tracking glasses into the lab's research
- Maintain and update the lab's IRB protocols
- Present research at weekly lab meetings
- Mentor and train undergraduate students in the lab

UMASS CHAN MEDICAL SCHOOL

Worcester, MA

Research Associate III, Cognitive Neuroscience Lab

August 2022-July 2025

- PI: Dr. Gregory J DiGirolamo & Dr. Max Rosen
- Conducted research in visual perception of medical images, visual attention, and visual search
- Single-handedly created and implemented all experiments, protocols, and datasets for NIH R01 project from scratch
- Managed and updated IRB protocols for multiple studies funded by NIH
- Ran radiologists, medical professionals, medical students, and undergraduate students on multiple in-person behavioral and eye-tracking studies
- Programmed experiments using ExperimentBuilder and python
- Analyzed experimental data using R, Dataviewer, SPSS, and Excel
- Created machine learning model with collaborators at the Hebrew University in Jerusalem
- Lead affiliated undergraduate cognitive neuroscience lab at the College of the Holy Cross
- Mentored and trained students in the undergraduate lab
- Created thorough training program for new undergraduate research assistants
- Organized and ran weekly lab meetings
- Created lab website using HTML, JS, and CSS

UNIVERSITY OF CONNECTICUT
Lab Manager, Language and Brain Lab

Storrs, CT
July 2021-July 2022

- PI: Dr. Emily Myers
- Conducted research in non-native speech sound acquisition using MRI and TMS
- Managed and update IRB protocols for multiple studies funded by NIH and NSF
- Programmed experiments using OpenSesame, python, and ExperimentBuilder
- Analyzed experimental data using R
- Scheduled weekly lab meetings
- Ran participants on multiple in-person behavioral studies
- Trained and mentored undergraduate research assistants through all aspects of the research process
- Organized and programmed the lab website
- Created intuitive study protocols that could be easily followed by anybody
- Performed spectral analysis on audio files using Praat

COLLEGE OF THE HOLY CROSS & UMASS MEDICAL SCHOOL
Lead Student Research Assistant, Cognitive Neuroscience Lab

Worcester, MA
October 2017-May 2020

- PI: Dr. Gregory J. DiGirolamo
- Conducted research in cognitive control, visual search tasks, radiologist perceptual processes, and substance use disorders
- Analyzed data files using Microsoft Excel and SPSS
- Programmed experiments on Experiment Builder for Eyelink 1000
- Explained findings at weekly lab meeting
- Recruited participants and managed schedule for running them
- Presented research at institutions including Holy Cross and Harvard University
- Assisted with academic writing for papers
- Lead student researcher in various completed studies

COLLEGE OF THE HOLY CROSS
Research Associate in Knowledge Acquisition Lab, Individual Student Researcher

Worcester, MA
April 2019-May 2020

- Project name: Investigating the Effects of Grammatical Gender on Unconscious Cognition
- PI: Dr. Gregory J. DiGirolamo, Dr. Florencia Anggoro
- Developed idea/hypothesis and study design on my own
- Constructed study with assistance of PIs
- Wrote IRB proposal
- Assisted with other studies lab is conducting investigating conceptual development

Publications

DiGirolamo, G. J., **Sorcini, F.**, Zaniewski, Z., Kruskal, J. B. & Rosen, M. P. (2025). Non-Conscious Detection of “Missed” Lung Nodules by Radiologists: Expanding the Boundaries of Successful Processing During the Visual Assessment of Chest CT Scans. *Radiology*, 314(2), e232996. <https://doi.org/10.1148/radiol.232996>

DiGirolamo, G. J., **Sorcini, F.**, Joskowicz, L., Winograd, Y., Hoogi, A. & Rosen, M. P. (2026). Reading the Reader: Utilizing Eye Movements and Machine Learning to Enhance Accuracy during Diagnostic Visual Search. In *Cancer Detection and Diagnosis, A Handbook of Emerging Technologies* (pp. 92–102). <https://doi.org/10.1201/9781003449942-12>

DiGirolamo, G. J., Kakouros, N., **Sorcini, F.**, Sorcini, S. P., Dupell, J., Sands, E. K. & Rosen, M. P. (2025). Non-conscious detection of ST-segment elevation during physician ECG interpretation. *Journal of Electrocardiology*, 93, 154148. <https://doi.org/10.1016/j.jelectrocard.2025.154148>

Posters and Presentations

Crocker, K., Peterson, J., **Sorcini, F.**, & DiGirolamo, G. J. (2024, September). *Perceptually trained novices can detect the “healthy” breast of a woman who has a mass in the opposite breast*. Presented at the Holy Cross Summer Research Symposium, Worcester, MA.

McHugh, L., Sands, E., **Sorcini, F.**, & DiGirolamo, G. J. (2024, September). *Medically naive undergraduates with perceptual training can detect abnormalities in CT scans*. Presented at the Holy Cross Summer Research Symposium, Worcester, MA.

Dupell, J., Patrizi Sorcini, S., **Sorcini, F.**, & DiGirolamo, G. J. (2024, September). *“Missed” heart attacks: Using non-conscious detection to improve diagnostic accuracy*. Presented at the Holy Cross Summer Research Symposium, Worcester, MA.

Paul, J., **Sorcini, F.**, Rosen, M., Bankier, A., DiGirolamo, G. J., & Qadri, M. A. (2024, April). *Mechanisms of abnormality detection during CT examination by pigeons*. Presented at the Comparative Cognition Conference, Melbourne, FL.

Crocker, K., Oldrati, M., Panaci, M., **Sorcini, F.**, & DiGirolamo, G. J. (2023, September). *Silly shapes: Testing the boundaries of pre-attentive vision*. Presented at the Holy Cross Summer Research Symposium, Worcester, MA.

Sorcini, F., Prunier, N., Skinner, J., & DiGirolamo, G. J. (2019, September). *Perceptual training of abnormality detection*. Presented at the Holy Cross Summer Research Symposium, Worcester, MA.

Sorcini, F., Hall, J., Gurchiek, E., Hayaki, J., & DiGirolamo, G. J. (2018, January). *Cognitive control to food and reward cues in males*. Presented at the Harvard National Collegiate Research Conference, Cambridge, MA.

Sorcini, F., Hall, J., Gurchiek, E., Hayaki, J., & DiGirolamo, G. J. (2018, September). *Cognitive control to food and reward cues in males*. Presented at the Holy Cross Summer Research Symposium, Worcester, MA.

Hall, J., **Sorcini, F.**, Gurchiek, E., Rabinovich, M., & DiGirolamo, G. J. (2018, September). *Unconscious detection of nodules using a touch screen*. Presented at the Holy Cross Summer Research Symposium, Worcester, MA.

Gurchiek, E., **Sorcini, F.**, Hall, J., Rabinovich, M., & DiGirolamo, G. J. (2018, September). *Penalty kicks in soccer: Exploring the unconscious brain*. Presented at the Holy Cross Summer Research Symposium, Worcester, MA.

Rabinovich, M., Gurchiek, E., Kathleen, K., **Sorcini, F.**, Hall, J., & DiGirolamo, G. J. (2018, May). *Unconscious detection of a target by non-experts*. Presented at the Holy Cross Psychology Research Symposium, Worcester, MA.

Orozco, L., Szkutak, A., **Sorcini, F.**, & DiGirolamo, G. J. (2018, May). *Cognitive control breakdowns to unhealthy foods in healthy weight females*. Presented at the Holy Cross Psychology Research Symposium, Worcester, MA.

Volunteering

Big Brother Big Sister Mentor

Worcester, MA
October 2018-March 2020

- Paired with Little Brother and visited the Boys and Girls Club once a week
- Assisted Little Brother with homework and extracurricular activities

Gateways Orientation Program Orientation Leader

Worcester, MA
August 2019-September 2019

- Participated in daily training sessions for a week in August
- Led a group of 29 first-year orientees and introduced them to Holy Cross

Skills & Interests

Technical: R, C++, Python, SPSS, ExperimentBuilder, DataViewer, HTML, Eyelink 1000, Microsoft Excel, Microsoft PowerPoint, Microsoft Word, Endnote, TMS, Localite, EMG, OpenSesame, Praat, audiometry, ABR using EEG, GraphicConverter, Horos, G*Power

Languages: English, Italian

Interests: cognitive neuroscience, vision, perception, attention, perceptual learning, neural networks, artificial intelligence, machine learning

Hobbies: cooking, day-dreaming, philosophy, soccer, skiing, photography, task automation