

CHRISTIAN B. SINNOTT - CURRICULUM VITA

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EDUCATION

University of Nevada, Reno

2017 - Present

Ph.D. in Cognitive and Brain Sciences – 3.91 GPA

Expected Graduation Year – 2023

Oregon State University

2016

M.A. in Interdisciplinary Studies – 3.66 GPA

Educational Psychology, Cognitive Psychology, Rural Studies

Thesis: Investigating Differences between Rural and Non-rural Students

Oregon State University

2014

B.A. in Psychology

RESEARCH INTERESTS

Self-motion perception, outdoor head- and eye-tracking, natural scene statistics, psychophysical methods, visual and vestibular sensory adaptation, head and eye movement modeling, Bayesian modeling.

PEER-REVIEWED WORK

Shankar, B., **Sinnott, C. B.**, Binaee, K., Lescroart, M. D. & MacNeilage, P. R. (2021). Ergonomic design development of the Visual Experience Database headset. *Proceedings of the ACM Symposium on Eye Tracking Research & Applications ActivEye Workshop, 14*, 1-4

Sinnott, C. B.*, Ramanujam, S.*, Shankar, B., Halow, S. J., Szekely, B., Binaee, K., & MacNeilage, P. R. (2021). VEDBViz: The Visual Experience Database visualization and interaction tool. *Proceedings of the ACM Symposium on Eye Tracking Research & Applications ActivEye Workshop, 14*, 1-4

Binaee, K., **Sinnott, C. B.**, Capurro, K. J., MacNeilage, P. R. & Lescroart, M. D. (2021). Pupil tracking under direct sunlight. *Proceedings of the ACM Symposium on Eye Tracking Research & Applications ActivEye Workshop, 14*, 1-4

Hausamann, P. A., **Sinnott, C. B.**, Daumer, M. & MacNeilage, P. R. (2021). Evaluation of the Intel RealSense T265 for tracking natural human head motion. *Scientific Reports, 11* (12486), 1-12.

Hausamann, P. A., **Sinnott, C. B.** & MacNeilage, P. R. (2020). Positional head-eye tracking outside the lab: An open-source solution. *Proceedings of the 12th ACM Symposium on Eye Tracking Research & Applications, 14*. 1-5

Sinnott, C. B., Liu, J., Matera, C., Halow, S., Jones, A. E., Moroz, M., Mulligan, J., Crognale, M. A., Folmer, E. & MacNeilage, P. R. (2019). Underwater virtual reality system for neutral buoyancy training: Development and evaluation. *Proceedings of the 25th ACM Symposium on Virtual Reality Software and Technology*, 29, 1-9.

(* after author name indicates both authors contributed equally to work.)

INVITED TALKS

VEDBViz: The Visual Experience Database visualization and interaction tool. *ActivEye Workshop*. May 2021

Mobile gaze tracking and the Visual Experience Database. *Smith-Kettlewell Eye Research Institute*. March 2020

RESEARCH EXPERIENCE

Graduate Research Assistant

Aug. 2017 - Present

Self-Motion Lab, University of Nevada, Reno

Advisor: Dr. Paul MacNeilage

My duties in this lab focus on experimental design, hardware set-up, programming, data collection, and data analysis. My current work uses outdoor head and eye-tracking to answer questions concerning how people move their head and eyes during everyday activities. This allows us to answer more specific modeling questions within the self-motion literature. This has required rapid prototyping of hardware, and integration of multiple visual and inertial sensors using Python and ROS. Previous work has focused on development and evaluation of virtual reality in an underwater, neutrally buoyant environment for astronaut and commercial training purposes. This required design, creation, and evaluation of an HMD usable in the underwater research environment.

Graduate Research Assistant

Sept. 2014 - June 2016

Human Development and Learning Lab, Oregon State University

Advisor: Dr. Kathryn Becker-Blease

My duties in this lab focused around discussing empirical research articles pertinent to research for my thesis, coding data for other ongoing studies, and designing new studies. In addition to these duties I was also tasked with guiding undergraduate research assistants through various tasks including data coding and entry. My work in this lab culminated in the completion of my thesis, wherein I investigated gaps in student success between rural and non-rural students. This involved the creation of a novel method of operationalizing and coding rural status among students.

Undergraduate/Graduate Research Assistant

Sept. 2013 - June 2016

Attention and Performance Lab, Oregon State University

Advisor: Dr. Mei-Ching Lien

My primary duty was guiding participants through experimental tasks pertinent to current topics in cognitive psychology. This was primarily through computer-based attention tasks, measured both with behavioral data as well electrophysiological data collected through electroencephalography

(EEG). I also collected data by computerizing a pre-existing psychological inventory through online survey software. I was also asked to assist with experimental design; particularly modification of pre-existing experimental paradigms. Additionally, I helped train new undergraduate assistants in EEG operation, as well as data analysis.

Research Projects In Progress:

Characterizing natural head movement statistics.	May 2020 - Present
Creating a natural visual experience database.	Aug. 2019 - Present
Quantifying determinants of retinal optical flow.	Mar. 2019 - Present

CONFERENCE PRESENTATIONS

Natural statistics of head orientation relative to gravity in humans: Implications for modeling spatial orientation.

Presented at the Society for Neuroscience 2021 meeting. Nov. 2021

Natural statistics of gravitational and inertial head acceleration in humans: Implications for modeling spatial orientation.

Presented at the 30th Annual Neural Control of Movement meeting. Apr. 2021

Characterization of human head orientation during natural behavior.

Presented at the 2021 Vestibular-Oriented Research Meeting. Feb. 2021

Underwater virtual reality for neutral buoyancy training: Development and evaluation.

Presented at the 25th ACM Symposium on Virtual Reality Software and Technology. Nov. 2019

Characterization of natural head and eye movements driving retinal flow.

Presented at the Society for Neuroscience 2019 Meeting. Nov. 2019

Characterization of natural head and eye movements driving retinal flow.

Presented at the Vision Sciences Society 2019 Meeting. May 2019

Underwater virtual reality for spatial orientation research.

Presented at the Vision Sciences Society 2019 Meeting. May 2019

Statistical characterization of heading stimuli in natural environments using SLAM.

Presented at the Society for Neuroscience 2018 Meeting. Nov. 2018

Statistical characterization of heading stimuli in natural environments using SLAM.

Presented at the 18th Annual Optical Society of America Fall Vision Meeting. Sept. 2018

Statistical characterization of heading stimuli in natural environments using SLAM.

Presented at the Vision Sciences Society 2018 Meeting.

May 2018

Underwater virtual reality for extra-vehicular activity training.

Presented at the 2017 Annual Nevada NASA Statewide Meeting.

Nov. 2017

No significant differences between rural and non-rural introductory psychology students.Presented at the Association for Psychological Science 27th Annual Conference.

May 2015

Identifying academic performance differences between rural and nonrural students.Presented at the Western Psychological Association 95th Annual Conference.

April 2015

An electrophysiological study of emotional processing in alexithymia.

Presented at the CUE Colloquium, Oregon State University.

May 2014

RELATED WORK EMPLOYMENT HISTORY

Department of Psychology, Reno, NV

Graduate Teaching Assistant

Aug. 2017 - Present

Helped faculty proctor and grade exams. Managed online grading system (Canvas) to provide grades and other feedback to students. Provided students with individual meetings as well as office hours to aid understanding and delivery of course material. Led review sessions before exams as well as after homework assignments were submitted. Conducted lectures in-person, via Zoom, and in hybrid formats. Classes assisted include Introduction to Statistics and Experimental Psychology.

School of Mechanical, Industrial, and Manufacturing Engineering, Corvallis, OR

Academic Advisor

March 2017 – July 2017

Served as part of a four-person advising team advising around 8,000 undergraduate students studying mechanical, industrial, manufacturing, and energy systems engineering. Duties involved advisement and verification of student-made two-year academic plans, registration PIN disbursement, referral to campus services, and graduation preparation. I also assisted internship interviewing and placement processes, creation and presentation of seminars targeted at first-year and prospective students, and department-based work retreats designed to improve outreach and recruitment of underrepresented student populations to engineering majors at Oregon State University.

School of Psychological Science, Corvallis, OR

Graduate Teaching Assistant

Sep. 2014 - June 2016

Assisted faculty with tasks including exam proctoring, exam grading, essay grading as well as led review sessions leading up to exams. Online grading systems including BlackBoard and Canvas were also managed. I was also responsible for leading weekly recitation sections with duties such as lecturing, grading assignments and essays, and assisting students through operation of statistical analysis software. Classes assisted include Personality, Human Lifespan Development, Introductory Psychology, and Research Methods in Psychology.

School of Psychological Science, Corvallis, OR

Student Office Assistant

Apr. 2013 – Sep. 2014

Ran administrative tasks such as scheduling advising appointments and meetings, operating copiers, computer programs including Word, Outlook and Excel; ordering supplies, hiring new employees, and troubleshooting various technical problems.

SERVICE**Graduate Student Reviewer**

Mar. 2021

Served as a graduate student member of the reviewing team for the Eye Tracking Research and Applications (ETRA) ActivEye workshop. The topic of submissions for this workshop included eye tracking accuracy, head pose tracking, data annotation, best practices in eye tracking, eye tracking with special populations, and ergonomic design of mobile eye trackers. I was tasked with providing feedback to four submissions on a short timetable (6 days). I also received and processed review rebuttals.

Graduate Advising Assistant

Jan. 2015 – Jun. 2015

Assisted advisors within department with undergraduate student advising duties. I was responsible for helping students schedule courses, guiding and informing them of on-campus resources, linking upcoming students to opportunities within as well as outside of department, assisting prospective students with graduate school application processes, and preparing students for graduation.

Student Promotion Committee – Chair

Oct. 2015 - Nov. 2015

I led a four-person committee to write a letter with regards to a faculty member's promotion in the department. We compiled and summarized letters written by students who have interacted with the faculty member in the past; as well as synthesizing those summaries with information from the faculty member's teaching dossier.

SKILLS

Coding: Python 3, LaTeX, OpenCV, Matlab, Unity (C#), ROS, bash/shell scripting

Development: Linux, Anaconda, Spyder, Git, PyCharm, RStudio, Overleaf

Research: Head-tracking, Eye-tracking, 32-channel EEG, Qualtrics

Teaching: Canvas LMS, BlackBoard Learn

Statistics: R, IBM SPSS, numpy/scipy, TensorFlow, scikit-learn, linear modeling, Bayesian modeling, machine learning, statistical learning.

LANGUAGES

English – C2 level as dictated by CEFR

German - B1 level as dictated by CEFR

PROFESSIONAL MEMBERSHIPS

Society for Neural Control of Movement

Vision Sciences Society

Society for Neuroscience

AWARDS

Graduate Dean's Merit Scholarship, <i>University of Nevada, Reno</i>	Oct. 2020
Graduate Dean's Merit Scholarship, <i>University of Nevada, Reno</i>	Oct. 2017
Graduate Teaching/Research Assistantship, <i>University of Nevada, Reno</i>	Aug. 2017 - Present
Graduate Teaching Assistantship, <i>Oregon State University</i>	Sep. 2014 - June 2016
Undergraduate Research Fellow, <i>Oregon State University</i>	May 2013
Dean's List, <i>Oregon State University</i>	Sep. 2013 - Dec. 2013
Pell Grant, <i>Oregon State University</i>	Sep. 2009 - June 2014
Oregon Opportunity Grant, <i>Oregon State University</i>	Sep. 2009 - June 2014