# Moses Lurbur

Seattle, WA — (509) 699-8458 — moses_lurbur@alumni.brown.edu — linkedin.com/in/moses-lurbur

## EDUCATION

**Brown University**, Providence, RI                      September 2017 - May 2022
*Bachelor of Science, Computer Science and Economics*                      GPA: 3.7

- Topics: Computer Vision, Deep Learning, Labor Economics
- Senior thesis: "Filling gaps in sparsely populated satellite data using recurrent neural networks"

## RESEARCH EXPERIENCE

**University of Washington (UW) and Trident Seafoods**                      Seattle, WA
*Collaborator*                      June 2023 - Present

- Research project that aims to reduce bycatch in the Alaskan commercial snow crab fishery, using machine learning and computer vision techniques
- Leading two fundraising efforts: developing research proposals for the North Pacific Research Board and the Bycatch Reduction Engineering Program in collaboration with a UW professor of computer science, fisheries researchers, and members of industry
- Establishing keypoint detection and pose estimation methods for the fine-grained behavioral analysis of snow crabs as part of a pilot study

**National Oceanic and Atmospheric Administration (NOAA)**                      Seattle, WA
*Research contractor (computer vision)*          February 2021 - August 2021, June 2023 - Present

- Researching the effectiveness of computer vision models to reliably detect the presence of salmon in complex marine video footage recorded inside commercial trawl nets
- Implementing novel and existing tracking algorithms and evaluating performance in busy, high occlusion trawl net videos
- Led the design and implementation of a deep learning powered, Python based, automated fish counting system designed to reduce time spent reviewing videos by over 90%

**NOAA**                      Little Port Walter, AK
*Research intern*                      June 2018 - August 2018

- Worked with a team of biologists to operate a national marine research station collecting detailed environmental and biological data while rearing over 500,000 Chinook salmon fry
- Led acoustic tag surveys of adult salmon to better understand pre-spawning movement patterns and operated a 20-foot boat equipped with acoustic tracking equipment
- Collected and analyzed spawning and mortality data of returning Chinook salmon

## PUBLICATIONS AND PRESENTATIONS

### Publications

- **Moses Lurbur**, Katherine C. Wilson, and Noëlle Yochum. "Detection and tracking: deep learning video analysis in trawl fisheries." *(in progress)*, 2023
- Katherine C. Wilson, **Moses Lurbur**, and Noëlle Yochum. "Automated video processing to support commercial fishing sustainability and innovation in the walleye pollock (Gadus chalcogrammus) fishery in Alaska." *(submitted)*, 2023

### Presentations

- **Deep learning video analysis to support trawl fishery sustainability**
  *Ocean Sciences Meeting*, poster, 2024
- **Using machine learning to differentiate species and count fish in trawl nets**
  *The Food and Agriculture Organization of the United Nations' Artificial Intelligence for a Digital Blue Planet forum*, talk, 2021
- **Filling gaps in chlorophyll data in the Bering Sea**
  *Brown Deep Learning Day*, poster, 2021

## HONORS AND AWARDS

**US Department of State Critical Language Scholar**
*Malang, Indonesia*, 2019

**Brown Connect Presidential LINK funding award**
*Providence, RI*, 2018

**Greater Wenatchee Area Technology Alliance's Future Technology Leader of the Year**
*Wenatchee, WA*, 2017

## PROFESSIONAL EXPERIENCE

**Amazon**                                                                   Seattle, WA
*Software Development Engineer*                               August 2022 - June 2023

- Developed serverless applications in AWS using industry standard continuous integration pipelines and automated testing to deliver a seamless customer experience
- Coordinated across teams to deploy customer facing changes to production quickly and safely

**Brown Design Workshop**                                           Providence, RI
*Manager*                                                          June 2020 - June 2022

- Managed the 20+ staff and day-to-day operations of Brown University's public makerspace
- Led the hiring of new staff, workshop scheduling, and purchasing of machines and materials

**Amazon Web Services**                                                      Remote
*Program Manager Intern*                                      June 2020 - August 2020

- Managed documentation of construction timelines and processes for highly secured data centers
- Collaborated with Program Managers across 30 teams to standardize workflow documentation

## TEACHING EXPERIENCE

**Catholic Community Services Youth Tutoring Program**             Seattle, WA
*Academic Tutor*                                                     2022 - Present

- Serving as a weekly one-on-one academic tutor for youth living in low-income and public housing

**Brown University**                                               Providence, RI
*Teaching Assistant*                                                     2019, 2021

- CSCI 1430: *Computer Vision*, Prof. Srinath Sridhar, Fall 2021
- CSCI 0111: *Computing Foundations: Data*, Prof. Doug Woos, Fall 2019

**Brown University**                                               Providence, RI
*Head Teaching Assistant*                                                     2020

- CSCI 0111: *Computing Foundations: Data*, Prof. Kathi Fisler, Spring 2020