

Luke Lloyd Longren

ADDRESS

PHONE

EMAIL

WEBSITE

www.nocu.be

Skills

LANGUAGES

Native

English

Proficient

German

PROGRAMMING

Proficient

Python, HTML/CSS/JS,

Git, TeX, LoggerNet

Familiar

C++, MATLAB, R,

Mercurial

MACHINERY

Articulated Trucks

Wheeled Fork Loaders

Tracked Skidsteers

Aircraft Deice Trucks

LICENSES

Driver (USA, DE)

Private Pilot (FAA)

Amateur Radio (FCC)

FOCUS POINTS

Detail oriented

Computer proficient

Electronics experience

Logistics knowledge

Friendly & Mindful

updated:

Mar. 2025

Employment History

PHYSICAL SCIENTIST

AUG. 2024 – FEB. 2025

National Oceanic & Atmospheric Administration (NOAA)

Boulder, CO, USA

Operated, calibrated, and maintained NOAA and partner climate instrumentation and projects. Was part of the Observatory Operations team that collects quality data to monitor the Earth's atmospheric composition and energy budget. Trained for the role of South Pole technician, which involves deploying for one year to run the observatory as a team of two.

OCEANOGRAPHIC DATA SPECIALIST

JAN. 2024 – JUN. 2024

University of Hawai'i

Honolulu, HI, USA

Supported, maintained, and developed acquisition and processing software and installation procedures. Trained technicians and scientists on using acquisition software and processing Acoustic Doppler Current Profiler (ADCP) data. Managed, maintained, and upgraded shipboard ADCP data systems on UNOLS, NOAA, and foreign research ships.

RESEARCH ASSOCIATE

FEB. 2023 – NOV. 2023

Leidos

McMurdo Station, Antarctica

Supported a variety of scientific research projects in the physical and astrophysical sciences over the austral winter at McMurdo Station. Duties included working with advanced scientific instrumentation, assisting in data collection, and carrying out research protocols for National Science Foundation (NSF) grantees and other groups (e.g., military, NOAA).

AIR TRANSPORTATION SPECIALIST

OCT. 2022 – FEB. 2023

Amentum/PAE

McMurdo Station, Antarctica

Handled cargo in Antarctica for the austral summer. The position involved movement of all supplies in and out of the station via aircraft, most of which were military. Responsibilities included the quality control of every aspect in cargo and supply handling, ensuring tasking was carried out safely and efficiently, and operation of heavy equipment on snow and ice.

VISITING SCHOLAR

JUL. 2021 – SEP. 2022

Humboldt University of Berlin

Berlin, BE, DE

Investigated neuromusculature in the elephant during and after my MSc thesis as a guest researcher. Initially explored automatic segmentation of individual elephant trunk muscles, later leading three other students in manual tracing the musculature. Analyzed the reconstruction to provide insight into the relationship between elephant trunk and brain.

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Education

MSC, COMPUTATIONAL NEUROSCIENCE

OCT. 2019 – MAR. 2022

Technical University of Berlin

Berlin, BE, DE

Bernstein Center for Computational Neuroscience

Thesis: Automatic Segmentation of Elephant Trunk Muscles

BSC, PHYSICS

AUG. 2015 – MAY 2019

Fort Hays State University

Hays, KS, USA

Kansas Academy of Mathematics and Science ('15-'17)

Minor - Mathematics

Publications

- [1] **L. Longren** & L. Eigen *et al.*, "Dense reconstruction of elephant trunk musculature", *Current Biology*, vol. 33, no. 21 (2023).
- [2] I. Rebollo, M. Schmidt, **L. Longren**, and S. Park, "Influence of visual food cues on autonomic activity and craving", *Biological Psychology*, vol. 165, p. 108197 (2021).

Employment History (continued)

RESEARCH ASSISTANT	NOV. 2020 – SEP. 2021
DIfE - Decision Neuroscience and Nutrition	Potsdam, BB, DE
Analyzed experimental data stemming from the biological reaction in humans to various nutritional stimuli. Specifically, led a project to inspect statistically the diurnal response of amino acid levels in blood plasma to differing food composition.	

CROSS UTILIZED AGENT	OCT. 2017 – JUL. 2019
SkyWest Airlines	Hays, KS, USA
Handled regional airline flights for United Express as a ramp, ticket, and gate agent. Had a broad range of responsibilities, including loading/unloading of luggage and cargo, servicing and marshalling of aircraft, customer service, and communication with flight crews. The position involved a thorough attention to detail and knowledge of policies and procedures.	

LANDSCAPE WORKER	MAY 2017 – AUG. 2017
University of Kansas	Lawrence, KS, USA
Maintained the university grounds during the summer. Worked on a team mainly using string trimmers. Additionally, serviced the mowing equipment and picked up litter.	

CUSTODIAN	MAY 2016 – AUG. 2016
Fort Hays State University	Hays, KS, USA

Part-time Employment

BARTENDER	NOV. 2022 – OCT. 2023
Gana-A'Yoo Services Corporation (GSC)	McMurdo Station, Antarctica

STAGE TECHNICIAN	OCT. 2018 – JUN. 2019
Sure Sound & Lighting Inc	Dodge City, KS, USA

MATH TUTOR	JAN. 2017 – MAY 2017
Fort Hays State University	Hays, KS, USA

FRONT DESK ASSISTANT	JAN. 2016 – NOV. 2016
Fort Hays State University	Hays, KS, USA

SOCCER REFEREE	MAR. 2014 – JUL. 2015
Sporting Kaw Valley	Lawrence, KS, USA

Volunteering

SCIENCE FAIR JUDGE	FEB. 2025
Boulder Valley School District	Boulder, CO, USA

LIBRARIAN	2022 – 2023
United States Antarctic Program (USAP)	McMurdo Station, Antarctica

EVENT VOLUNTEER
FIRST Robotics

2015 – 2017
Kansas City, MO, USA

Research

MSC THESIS JUL. 2021 – MAR. 2022
Lab of Michael Brecht - Humboldt University of Berlin Berlin, BE, DE

Department of Animal Physiology / Systems Neurobiology and Neural Computation
Automatic methods of muscle segmentation were investigated further. Imaging with μ CT of elephant trunk was conducted. Then, the method implemented a basic deformable model with a vector field as the main external force, calculated from the edge map.

LAB ROTATION MAR. 2021 – MAY 2021
Lab of Michael Brecht - Humboldt University of Berlin Berlin, BE, DE

Department of Animal Physiology / Systems Neurobiology and Neural Computation
Using a μ CT scan of an elephant's trunk, automated segmentation of individual muscles is attempted. The methods used include: histogram equalization, distance transformations, cross-correlation subtraction, and both watershed/contour-tree segmentation.

LAB ROTATION JAN. 2021 – FEB. 2021
Lab of Soyoung Park - German Institute of Human Nutrition Potsdam, BB, DE

Department of Decision Neuroscience and Nutrition
As part of a visual food cue study, where participants observed images of food before and after a meal, heart rate and respiratory data was analysed. The results from the lab rotation were included in a publication.

LAB ROTATION OCT. 2020 – DEC. 2021
Lab of Pawel Romanczuk - Humboldt University of Berlin Berlin, BE, DE

Collective Information Processing, Institute for Theoretical Biology
Artificial swarms on a uniform grid were generated and simulation of the visual field for each individual unit was conducted. The structure of collective visual networks was then analysed for varied density and order parameters.