

Nejat Can

<https://ncan33.github.io/> • ncan@u.rochester.edu • 607-542-6702

EDUCATION

University of Rochester

Rochester, NY

B.S. in Biomedical Engineering

2018-2022

- **Honors and Scholarships:** NAE Grand Challenges Scholar Program, International Baccalaureate Scholarship, Jesse L. Rosenberger Prize, Dean's List
- **Selected Courses:** Neuroscience of Neuroprosthetics (*graduate-level*), Biomedical Imaging (*graduate-level*), Biosolid Mechanics, Intro to CAD, Signals & Systems, MATLAB for Biomedical Engineering

RESEARCH EXPERIENCE

Massachusetts Institute of Technology

Boston, MA

Research Intern at the Martinos Center of Harvard-MIT-MGH

May 2021 – present

- Researching means to improve diffusion MRI using unsupervised deep learning. Using TensorFlow.
- Wrote Python script that fits a diffusion tensor on MR images in NIfTI format; My code performs operations on rank 3 and rank 4 tensors; Used NumPy for tensor operations
- Awarded competitive stipend

Advanced Physiological Optics Laboratory

Rochester, NY

Research Assistant at the Yoon Lab

August 2020 – January 2021

- Researched non-contact optical methods to measure the human cornea's mechanical properties *in vivo* by exploiting the phenomenon of Brillouin scattering

University of Rochester Medical Center

Rochester, NY

Research Assistant at the Whasil Lee Lab

April 2019 – May 2021

- Participated in engineering projects using mechatronics tools to create experiment systems
- Used MATLAB to analyze mechanical loads on mice during ACL rupture (*Summer 2020*)
- Independently investigated calcium activation of Piezo channels in knee cartilage (*Summer 2019*)

PUBLICATIONS

Kotelsky, A, Anissa, E, **Can, NY**, Proctor, A, Mannava, S, Prösche, C, Lee, W. (2021). Effect of knee joint loading on chondrocyte mechano-vulnerability and severity of posttraumatic osteoarthritis induced by ACL-injury in mice. *Osteoarthritis and Cartilage*. <https://doi.org/10.1101/2021.06.16.448294>

Kotelsky, A, Proctor, A, Anissa, E, **Can, NY**, Mannava, S, Lee, W. (2021). Unilateral and bilateral ACL injuries exhibit distinct vulnerability of chondrocytes to injurious mechanical forces, *ORS 2021 Annual Meeting*, Virtual.

Can, NY, Kotelsky, A, Proctor, A, Mannava, S, Lee, W. (2020). Design of a Portable and Low-Cost Device to Quantify Anterior Cruciate Ligament Rupture Force in Mice, *Center for Musculoskeletal Research 10th Annual Symposium*, Virtual.

Kotelsky, A, Proctor, A, Anissa, E, **Can, NY**, Mannava, S, Lee, W. (2020). Unilateral and bilateral ACL injuries exhibit distinct sensitivity of chondrocytes to injurious impact loading, *Center for Musculoskeletal Research 10th Annual Symposium*, Virtual.

SELECTED PROJECTS

Force Gauge Device for Research Application

<https://github.com/ncan33/STIF-2019>

Designed a device that measures the amount of force applied during ACL injury on mice. The device has contributed to three publications so far. Access technical report for device [here](#).

Diffusion Tensor Fitting in Python<https://github.com/ncan33/diffusion>

Python script that fits a diffusion tensor on MR images. Also serves as a data interface for machine learning.

Confocal Microscope Imaging Platform<https://tinyurl.com/3mcuws34>

Designed and 3D printed a part that fulfilled the design need for a platform that allows greater spatial translation in the x and y directions during imaging in the confocal microscope.

Computational Analysis of HighFinesse Laser Spectra<https://github.com/ncan33/matlabHighFinesse>

Acquired a large dataset of laser spectra using optical methods. In MATLAB, wrote an automated algorithm that converts raw ASCII output into an easy to analyze data structure. Processed the signal using tools such as Fourier transform and destructive interference.

TEACHING EXPERIENCE**U of R Department of Biomedical Engineering****Rochester, NY***Statics and Dynamics (BME 201) Teaching Assistant**August 2020 – December 2020*

- Recorded recitation videos; held office hours to assist students on mechanics problems

LEADERSHIP**University of Rochester Varsity Rowing****Rochester, NY***Men's Team Captain*

- Acted as a liaison between coaches and athletes; promoted a competitive team atmosphere

International Model United Nations of Alkmaar**Alkmaar, Netherlands***Committee Chair*

- Chair at the IMUNA 2017 conference

SKILLS

Software Proficiency:	Solidworks, Creo (Pro/ENGINEER), MATLAB, LaTeX, FEBio, Arduino IDE
Communication Skills:	Competed in World Debate Championships
Languages:	English (Bilingual Proficiency), Turkish (Native Speaker)
Programming Languages:	Python, C/C++, Git, Zsh
Technical Skills:	CAD, 3D Printing, Arduino Systems, FEM/FEA, TensorFlow, Keras, Scikit-learn