

# Nicholas Heller

## Curriculum Vitae

4-192, 200 Union St. SE  
Minneapolis, MN 55403  
+1 (612) 625 2409  
✉ helle246@umn.edu

[www-users.cs.umn.edu/~helle246](http://www-users.cs.umn.edu/~helle246)



### Research Interests

Interpretable machine learning, data mining, visual biomarker discovery, medical image computing, urologic oncology.

### Education

2017–Present **PhD Computer Science & Engineering**, *University of Minnesota – Twin Cities*.

**Advisor:** Nikolaos Papanikolopoulos

**GPA:** 3.88

2013–2017 **B.S. Computer Science**, *University of Minnesota – Twin Cities*.

### Selected Publications and Presentations

- 2019 *Class Saliency Maps Reveal Computer Vision's Basis for Diagnosing Metastatic Carcinoma in Lymph Nodes*.  
**Nicholas Heller**, Nikolaos Papanikolopoulos, Vassilios Morellas, and Alexander Truskinovsky  
Platform Presentation, Annual Meeting of the US and Canada Academy of Pathology
- 2019 *Automatic R.E.N.A.L. nephrometry scoring using machine learning*.  
Paul Blake, Niranjana Sathianathan, **Nicholas Heller**, Joel Rosenberg, Zachary Rengel, Keenan Moore, Heather Kaluzniak, Ed Walczak, Nikolaos Papanikolopoulos, and Christopher Weight  
Poster, Annual Meeting of the European Association for Urology
- 2018 *Imperfect Segmentation Labels: How Much Do They Matter?*.  
**Nicholas Heller**, Joshua Dean, and Nikolaos Papanikolopoulos  
Oral Presentation, MICCAI LABELS Workshop, 2018
- 2018 *Computer Aided Diagnosis of Skin Lesions from Morphological Features*.  
**Nicholas Heller**, Erika Bussmann, Aneri Shah, Joshua Dean, Nikolaos Papanikolopoulos  
Technical Report
- 2018 *A Balance Cascade of Deep Neural Networks for CT Renal Segmentation*.  
**Nicholas Heller**, Michael Tradewell, Joshua Dean, Vassilios Morellas, Nikolaos Papanikolopoulos, Niranjana Sathianathan, and Christopher Weight  
Poster, Annual Meeting of the Engineering & Urology Society
- 2018 *Convolutional Neural Networks for Aircraft Noise Monitoring*.  
**Nicholas Heller**, Derek Anderson, Matt Baker, Brad Juffer, Nikolaos Papanikolopoulos  
Technical Report
- 2017 *A Web-Based Platform for Distributed Annotation of Computerized Tomography Scans*.  
**Nicholas Heller**, Panagiotis Stanitsas, Vassilios Morellas, Nikolaos Papanikolopoulos  
Poster, MICCAI LABELS Workshop, 2017

## Service

- Lead Organizer 2019 MICCAI Kidney Tumor Segmentation Challenge, 2019 MICCAI LABELS Workshop, University of Minnesota "Medical Imaging With AI" (MIWAI) Journal Club.
- Organizer 2019 Annual Meeting of the Engineering and Urology Society.
- Reviewer International Conference on Robotics and Automation (2019), IEEE Transactions on Intelligent Transportation Systems (2018 - present), MICCAI LABELS Workshop (2018), Annual Meeting of the Engineering and Urology Society (2018).

## Teaching

- Spring 2018 CSCI 2033, Elementary Computational Linear Algebra, *Head TA, Guest Lecturer*.
- Fall 2017 CSCI 5511, Artificial Intelligence 1, *Head TA, Guest Lecturer*.

## Graduate Coursework

- In Progress Special Advanced Topics in Robotics and Vision, Computer Vision, Architecture and Implementation of Database Management Systems.
- Completed Error-correcting Codes Finite Fields and Algebraic Curves, Computational Aspects of Matrix Theory, Theory of Probability and Statistics, Introduction to Machine Learning, Analysis of Numerical Algorithms, Introduction to Research in Computer Science, Colloquium.

## Awards

ARCS Foundation Scholar, Best Paper Nomination at MICCAI LABELS 2018, UMN TA Professional Development Certification.

## References

### **Nikolaos Papanikolopoulos**

Distinguished McKnight Presidential  
Endowed Professor  
Computer Science and Engineering  
University of Minnesota – Twin Cities

### **Victoria Interrante**

Professor  
Computer Science and Engineering  
University of Minnesota – Twin Cities

### **Marvin Marshak**

Distinguished Professor  
Physics  
University of Minnesota – Twin Cities

### **Christopher Weight**

Associate Professor  
Urologic Surgery  
University of Minnesota – Twin Cities