

Nishchal Sapkota

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EDUCATION

The University of Notre Dame (UND)
Ph.D. in Computer Science and Engineering

Notre Dame, IN
08/2020 - Present

- Research Area: Computer Vision, Deep Learning, Bio-medical Image Analysis
- Advisor: **Dr. Danny Chen**

The University of Southern Mississippi (USM)
Bachelor of Science with Honors, Cumulative GPA: **3.91**, *Summa Cum Laude*

Hattiesburg, MS
08/2016 - 05/2020

- Computer Science (major GPA 3.95)
- Mathematics (major GPA 3.85)
- Thesis: *Probabilistic Analysis of Revenues in Online Games*
- Advisor: **Dr. Bernd Schroeder** and **Dr. Zhifu Xie**

PUBLICATIONS

Conference Papers

- [Nishchal Sapkota](#), Yejia Zhang, Susan M Motch Perrine, Yuhua Hsi, Sirui Li, Meng Wu, Greg Holmes, Abdul R. Abdulai, Ethylin W. Jabs, Joan T. Richtsmeier, and Danny Z Chen. A conditional transformer network for 3d micro-ct embryonic cartilage segmentation. *Submitted to 2024 IEEE International Symposium on Biomedical Imaging (ISBI)*, 2024
- [Nishchal Sapkota](#), Yejia Zhang, Sirui Li, Peixian Liang, Zhuo Zhao, and Danny Z Chen. Shmc-net: A mask-guided feature fusion network for sperm head morphology classification. *Submitted to 2023 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, 2023
- Yejia Zhang, Pengfei Gu, [Nishchal Sapkota](#), Yaopeng Peng, Hao Zheng, and Danny Z Chen. Swipe: Efficient and robust medical image segmentation with implicit patch embeddings. *Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2023
- Yejia Zhang, Pengfei Gu, [Nishchal Sapkota](#), Hao Zheng, Peixian Liang, and Danny Z Chen. A point in the right direction: Vector prediction for spatially-aware self-supervised volumetric representation learning. *The IEEE International Symposium on Biomedical Imaging (ISBI)*, 2022
- Yejia Zhang, [Nishchal Sapkota](#), Pengfei Gu, Yaopeng Peng, Hao Zheng, and Danny Z Chen. Keep your friends close & enemies farther: Debiasing contrastive learning with spatial priors in 3d radiology images. In *2022 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, pages 1824–1829. IEEE, 2022
- Yejia Zhang, Xinrong Hu, [Nishchal Sapkota](#), Yiyu Shi, and Danny Z Chen. Unsupervised feature clustering improves contrastive representation learning for medical image segmentation. In *2022 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, pages 1820–1823. IEEE, 2022
- [Nishchal Sapkota](#), Rimsha Bhatta, Phillip Dabney, and Zhifu Xie. Hunting co-operation in the middle predator in three species food chain model. *Proceedings of the Louisiana-Mississippi Section of the Mathematical Association of America*, 2020

Journal Papers

- Susan M Motch Perrine, [Nishchal Sapkota](#), Kazuhiko Kawasaki, Yejia Zhang, Danny Z Chen, Mizuho Kawasaki, Emily Durham, Yann Heuze, Laurence Legeai-Mallet, and Joan T Richtsmeier. Embryonic cranial cartilage defects in the fgfr3y367c/+ mouse model of achondroplasia. *Anatomical Record*, 2023

Conference Abstracts

- Susan M Motch Perrine, [Nishchal Sapkota](#), Yejia Zhang, Danny Z Chen, Mizuho Kawasaki, Emily Durham, Yann Heuze, Laurence Legeai-Mallet, and Joan T Richtsmeier. Cranial cartilage defects in the fgfr3 y367c/+ mouse model of achondroplasia. *American Association for Anatomy*, 2023
- Jordan A Wilson, Susan M Motch Perrine, Yejia Zhang, [Nishchal Sapkota](#), Danny Z Chen, Meng Wu, Mizuho Kawasaki, Megan Veltri, Abigail Coupe, Ethylin Wang Jabs, Kazuhiko Kawasaki, and Joan T Richtsmeier. Integrating microcomputed tomography and histology to construct a 3d model of the lower jaw in c57bl/6j mice. *American Association for Anatomy*, 2023
- Susan M Motch Perrine, [Nishchal Sapkota](#), Kazuhiko Stephens, Kawasaki, Meng Wu, Danny Z Chen, Ethylin Wang Jabs, and Joan T Richtsmeier. Localized defects of the chondrocranium and meckel's cartilage of apert fgfr2+/p253r and crouzon fgfr2cc342y/+ mouse models. *12th Structural Birth Defects Meeting*, 2022

Undergraduate Thesis

- [Nishchal Sapkota](#) and Bernd SW Schröder. Probabilistic analysis of revenues in online games. *University of Southern Mississippi*, 2020

TEACHING ASSISTANCE EXPERIENCE

The University of Notre Dame

Notre Dame, IN

[Graduate Teaching Assistant](#)

- CSE 60111: Complexity and Algorithms Spring 2023
 - Class Size: 40 Graduate Students || Instructor: **Dr. Danny Chen**
 - Prepared assignment solutions, graded assignments & tests and held office hours.
- CSE 40333: Mobile App Design Spring 2021
 - Class Size: 30 Undergraduate Students || Instructor: **Dr. John Templeton**
 - Helped in preparing lecture materials, graded assignments/projects, and held office hours.
- CSE 20110: Discrete Mathematics Fall 2020
 - Class Size: 190 Undergraduate Students || Instructor: **Dr. Corey Pennycuff**
 - Graded assignments/projects, and held office hours.

SCHOLARSHIPS, GRANTS, HONORS AND ACHIEVEMENTS

- CSE Select Fellowship Award (*1 in 40 incoming Ph.D students*) UND 2020
- [First Place](#), Mathematics Comprehensive Exam (MFT) USM 2019
- [Second Runner Up](#): Best Undergraduate Paper MAA LA/MS Section Meeting 2019
- Eagle SPUR/Wings grant, Drapeau Center for Undergraduate Research USM 2019
- Honors Keystone Scholarship USM 2019
- Wright W. and Annie Rea Cross Endowed Chair in Mathematics USM 2017-2019
- Danny R. Carter Endowed Scholarship USM 2017, 2019
- [Finalist](#), Integration Bee MAA LA/MS Section Meeting 2018
- Nominated for College of Science and Technology's [Outstanding Sophomore Award](#) USM 2017
- Burner Science and Technology Annual Scholarship USM 2017
- Wallace C. and Lynn L. Pye Endowed Scholarship USM 2017

LEADERSHIP ROLES

The University of Southern Mississippi

Event Co-ordinator

Hattiesburg, MS

08/2018 - 05/2020

Nepalese Student Association (NSA, USM)

- Planned and organized events to promote socio-cultural aspects of Nepalese and other Southeast Asian International Students.
- Conducted the stage programs and arranged catering for the Annual Event (Nepali Night) for 300 attendees.

International Ambassador

Fall 2019

International Student and Scholar Services (ISSS, USM)

- Responsible for organizing Incoming International Student Orientation.
- Organized Campus Resources Fair.

Director of Diversity

04/2018 - 05/2019

Student Government Association (SGA, USM)

- Served as a student body representative in diversity affairs regarding faculty, staff, and students on campus.
- Worked with multicultural organizations, the university diversity committee, the office of multicultural services and all branches of SGA to promote diversity and inclusivity on campus and within SGA.

CONFERENCES ATTENDED

Oral Presenter

28th Annual USA/USM/SELU Math and Physics Mini-Conference

04/04, 2019

The University of Southern Mississippi

Gulfport, MS

Second Runner-Up, Undergraduate Oral Presentation and Paper Competition

LA/MS Section Annual Meeting of Mathematics Association of America (MAA)

02/21-02/23, 2019

Mississippi College

Clinton, MS

Poster Presenter

SIAM Annual Meeting of Texas-Louisiana Section 2018

10/05-10/07, 2018

Louisiana State University

Baton Rouge, LA