

# James Vanderhyde

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## EDUCATION

### Georgia Institute of Technology

Ph.D. in Computer Science, Math minor, August 2007

Thesis: "Topology control of volumetric data"

Advisor: Andrzej Szymczak

### Michigan State University

M.S. in Computer Science, May 2001

Project: "Comparing evolutionary trees and tree-building methods"

Advisor: Eric Torng

### Hope College, Holland, MI

B.S. in Math and Computer Science, German minor, May 1999, *summa cum laude*

## ADMINISTRATIVE EXPERIENCE

### Saint Xavier University, Chicago, IL 60655

2018–2020

Computer Science Department chair—Attended and delegated new student orientation, prepared department course schedule, oversaw assessment, performed 5-year department review, led anti-racist initiatives.

### Saint Xavier University, Chicago, IL 60655

2016–2018, 2023–2025

MACS program director—admitted and advised all graduate students in the Masters of Applied Computer Science program, assisted international students with additional academic paperwork, and served on the Graduate Advisory Council.

## TEACHING EXPERIENCE

### Saint Xavier University, Chicago, IL 60655

2015–present

Associate professor—taught upper-level and lower-level computer science courses (across curriculum) and graduate courses, developed old and new courses (data visualization, algorithms, game design and development, programming languages), and engaged in research projects.

### Benedictine College, Atchison, KS 66002

2009–2015

Associate professor—taught upper-level and lower-level math and computer science courses (across curriculum), advised undergraduates, performed department and college service, engaged in undergraduate research projects.

### Governor's Honors Program, Valdosta, GA 31698

2004–2006

Math teacher—taught various math and computer science topics in a six-week summer program for advanced high school students. Topics included graph theory, topology, computer science theory, discrete math, introductory programming in Delphi, and advanced programming with Java and with OpenGL.

### Michigan State University, East Lansing, MI 48823

1999–2000

Teaching Assistant—CSE 101, Computing Concepts and Competencies. Led 3 of 60 sections offered each semester. Presented material and helped students with tasks in word processing, spreadsheet design, and website design. Held office hours and graded exams.

### Georgia Institute of Technology, Atlanta, GA 30332

2001–2007

Teaching assistant—Theory and Algorithms, Discrete Math, Computer Graphics, Digital Video Special Effects, Video Game Design. Graded papers, held office hours, presented homework solutions, led review sessions, helped design projects, guest lectured, and graded and advised projects.

**Hope College, Holland, MI 49423** **1996–1999**  
German Drill instructor—instructed first-year German students once a week  
Math tutor in math drop-in center—tutored random students who needed help in undergrad math courses

### INDUSTRY EXPERIENCE

**IronCAD, Atlanta, GA 30339** **2007–2009**  
Software Engineer—Visual C++ development

**Fusionary Media, Grand Rapids, MI 49503** **1999–2001**  
Java, ASP, and ColdFusion research and development for web applications

### RESEARCH EXPERIENCE

**Saint Xavier University, Chicago, IL 60655** **2019–2024**  
Researcher—VR for STEM education, funded by PUMA STEM and Explore STEM NSF grants

**Georgia Institute of Technology, Atlanta, GA 30332** **2002–2003**  
Research Assistant—Graphics and visualization of topology

**Michigan State University, East Lansing, MI 48823** **2000–2001**  
Research Assistant—Computational biology and artificial life

**Hope College, Holland, MI 49423** **1996–1999**  
Summer math research program—chaos theory, funded by NSF REU  
Summer computer science research program—educational visualizations, funded by NSF REU  
Research Assistant—typed quizzes, corrected papers, and helped with research for German professor

### PUBLICATIONS

- J. Vanderhyde, “Scaffolding assignments: how much is just enough?” *Journal of Computing Sciences in Colleges*: Volume 34 Issue 3, October 2018, pp. 55–63.
- J. Vanderhyde and F. Appel, “With greater CS enrollments comes an even greater need for engaging teaching practices,” *Journal of Computing Sciences in Colleges*: Volume 32 Issue 1, October 2016, pp. 38–45.
- A. Szymczak and J. Vanderhyde, “Airway segmentation by topology-driven local thresholding,” *Proc. SPIE*, Vol. 6914, 69143D (2008).
- J. Vanderhyde and A. Szymczak, “Topological simplification of isosurfaces in volumetric data using octrees,” *Graphical Models* 70 (2008), pp. 16–31.
- A. Szymczak and J. Vanderhyde, “Simplifying the topology of volume datasets: an opportunistic approach,” *Georgia Institute of Technology* (2005), GVU Technical Report, GIT-GVU-05-09.
- A. Szymczak and J. Vanderhyde, “Extraction of Topologically Simple Isosurfaces from Volume Datasets,” *IEEE Visualization* 2003, pp. 67–74.
- H. L. Dershem and J. Vanderhyde, “Java Class Visualization for Teaching Object-Oriented Concepts,” *ACM SIGCSE* 1998, pp. 53–57.

### PRESENTATIONS

- “A metaphor from competitive gaming: the crown that will last forever,” *Association of Christians in the Mathematical Sciences*, 31 May 2019.
- “Nifty Assignment: Space Invaders with a database-backed leaderboard,” *CCSC: Midwest*, 29 September 2018.
- “Monte Carlo tree search,” *Chicago Clojure Meetup*, 26 July 2017.
- “Jumping implementation in video games,” poster presentation by J. Rioux and J. Vanderhyde, *SIGCSE* 2015.
- “Nifty assignment: Exploiting a networked game,” *Consortium for Computing Sciences in Colleges: Central Plains regional conference*, 2013.
- “Nifty assignment: Cellphone text messaging,” *Consortium for Computing Sciences in Colleges: Central Plains regional conference*, 2013.
- “Board game project ideas for CS1 and CS2,” workshop co-led with Zack Kurmas, *SIGCSE* 2012.

## **CURRICULAR MATERIALS**

“Find the closest points of interest to a starting point using Open Street Map and BRIDGES,” May 2025.

“Data frame slicing and filtering,” POGIL Activity Clearinghouse, 11 March 2024.

“Entity-Component-System,” POGIL Activity Clearinghouse, 10 January 2023.

“Event-driven Programming,” POGIL Activity Clearinghouse, 10 January 2023.

“Motion Behaviors,” POGIL Activity Clearinghouse, 10 January 2023.

“The Halting Problem,” POGIL Activity Clearinghouse, 9 January 2023.

## **PROFESSIONAL SERVICE**

Served on and chaired Assessment Steering Committee at Saint Xavier University—established academic procedures and encouraged assessment processes (2024–present).

Served on Sabbatical Leave Committee at Saint Xavier University—evaluated applications for sabbatical (2022–2024).

Served on First Year Experience Committee at Saint Xavier University—evaluated and helped redefine first-year endeavors and courses (2018–2019).

Served on General Education Committee at Saint Xavier University—helped oversee general education assessment activities and plan new curriculum (2017–2020).

Served on and chaired Sylvia Schlunk scholarship committee (2017–2019).

Reviewed papers for SIGCSE and CCSC conventions (2013–present).

Served on Assessment Committee at Benedictine College—helped oversee general education and departmental assessment activities (2011–2014).

Reviewed posters for MINK WIC (regional women in computing conference) (October 2013).

Reviewed two chapters of a new discrete math book from Wiley.

Served as a technical reviewer for a book: *Learning Stencyl 3.x Game Development* by Innes Borkwood, 2013 Packt Publishing.

Interviewed applicants for presidential scholarships at Benedictine College and Georgia Tech (2010–2015).

Served as a student volunteer at the SIGCSE 2007 convention.

## **PROFESSIONAL AFFILIATIONS**

Association for Computing Machinery

ACM Special Interest Group for Computer Science Education

Chicago Clojure Meetup

## **EXTRA-CURRICULAR ACTIVITIES**

Friendship Club, Palos Heights, IL 2021–present

Palos Heights Christian Reformed Church Celebration Choir, Palos Heights, IL 2015–present

Pine Ridge Presbyterian Church Chancel Choir, Kansas City, MO 2011–2015

Theater Awards Academy, Benedictine College, Atchison, KS 2014–2015

North Avenue Presbyterian Church Chancel Choir, Atlanta, GA 2005–2009

Georgia Tech Christian Campus Fellowship (various leadership groups) 2002–2007

Spartasoft Video Game Programming Group (co-founder and secretary), Michigan State University 2000–2001

Graduate InterVarsity (executive committee), Michigan State University 2000–2001

Alpha Kappa Pi academic fraternity (one of original members, treasurer), Hope College 1996–1999

Hope College Orchestra, Hope College Gospel Choir 1995–1999

## **ACHIEVEMENTS AND AWARDS**

Teacher-Scholar Award, College of Arts and Sciences, Saint Xavier University, 2023

Tenured at Saint Xavier University, Chicago, IL

Tenured at Benedictine College, Atchison, KS

President’s Fellowship, Georgia Institute of Technology

Hope College Summa Cum Laude, GPA 3.962

Third in my high school class with GPA 3.9

Top 100 in Michigan Math Prize Competition (Michigan high schoolers), 1994

National Merit Finalist

First place out of 30 teams in Lower Michigan Math Competition (MIAA colleges)

Scored positively on the Putnam Math Competition, 1995–1998

Phi Beta Kappa Honor Society

Sigma Xi Science Research Honor Society

Pi Mu Epsilon, Math Honor Society

Delta Phi Alpha, German Honor Society