

SIDDHARTHA CHAUDHURI

CURRICULUM VITAE

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RESEARCH INTERESTS

Data-driven 3D design; 3D shape analysis; high-level shape understanding

EDUCATION

2011	Ph.D.	Computer Science	Stanford University
		<i>Dissertation: 3D Modeling with Data-Driven Suggestions; Supervisor: Vladlen Koltun</i>	
2009	M.S.	Computer Science	Stanford University
2005	B.Tech.	Computer Science & Engineering	IIT Kanpur

EMPLOYMENT AND RESEARCH APPOINTMENTS

2017-present	Senior Research Scientist	Adobe Research
2015-present	Assistant Professor	IIT Bombay (currently on leave)
2014-2015	Lecturer	Cornell University
2012-2014	Postdoctoral Research Associate	Princeton University <i>(supervisor: Thomas Funkhouser)</i>
2011-2012	Postdoctoral Research Fellow	Stanford University <i>(supervisors: Thomas Funkhouser, Vladlen Koltun)</i>
2012	Architect & Chief Developer	FUSE Character Modeler, Mixamo Inc. (acquired by Adobe and released as part of Adobe Creative Collection) http://www.adobe.com/fuse
2009-2011	Research Assistant	Stanford University <i>(supervisor: Vladlen Koltun)</i>
2005-2008	Stanford Graduate Fellow	Stanford University <i>(supervisor: Vladlen Koltun)</i>
2004	Research Intern	École Polytechnique Fédérale de Lausanne <i>(supervisor: Edoardo Charbon)</i>
2001-2005	Undergraduate Researcher	IIT Kanpur <i>(supervisors: Shashank K. Mehta, R. K. Ghosh, Amitabha Mukerjee)</i>

TEACHING EXPERIENCE

Spring 2017	CS749: Digital Geometry Processing	Instructor	IIT Bombay
Fall 2016	CS475/675: Computer Graphics	Instructor	IIT Bombay
Spring 2016	CS749: Digital Geometry Processing	Instructor	IIT Bombay
Spring 2015	CS2800: Discrete Structures	Instructor	Cornell
Spring 2015	CS2110: Object-Oriented Prog. & Data Structures	Instructor	Cornell
Fall 2014	CS2800: Discrete Structures	Instructor	Cornell
Spring 2014	COS426: Computer Graphics	Preceptor	Princeton
Spring 2013	COS436: Human-Computer Interface Technology	Guest Lecturer	Princeton
Spring 2013	COS126: General Computer Science	Preceptor	Princeton
Winter 2012	CS248: Interactive Computer Graphics	Guest Lecturer	Stanford
Winter 2011	CS248: Interactive Computer Graphics	Guest Lecturer	Stanford
Spring 2011	CS208: Canon of Computer Science	Course Assistant	Stanford
Summer 2010	CS148: Introduction to Computer Graphics	Instructor	Stanford
Spring 2010	CS208: Canon of Computer Science	Course Assistant	Stanford
Winter 2007	CS103X: Discrete Structures (accelerated)	Course Assistant	Stanford

HONOURS AND AWARDS (SELECTED LIST)

2018	Early Research Achiever Award (2017), IIT Bombay
2015-2018	Institute Chair Assistant Professorship, IIT Bombay
2015	Selected as one of five Outstanding Faculty Members (across all departments) by the Cornell Class Council of 2018
2005-2008	PACCAR Inc. Stanford Graduate Fellowship
2005	Director's Gold Medal for Best All-Round Achievement and Leadership, IIT Kanpur
2005	Dr. V. Rajaraman Scholarship for Best Final Year Student in Computer Science (based on academic performance in 2001-04), IIT Kanpur
2002-2004	Academic Excellence Award, IIT Kanpur
2002	Lucent Global Science Scholar
2000	The Telegraph Award for Best All-Round Student in the state of West Bengal, India
1999-2005	National Talent Search Scholarship, Govt. of India

Awards won by student research advisees:

- Owais Khan: Research Excellence Award (B. Tech.), IIT Bombay CSE, 2017
- Sanjeev Mk: Research Excellence Award (M. Tech.), IIT Bombay CSE, 2017
- Sanjeev Mk: Qualcomm Innovation Fellowship, India, 2016

PROFESSIONAL ACTIVITIES

- Program Committee Member: SGP 2020, IJCAI-PRICAI 2020, Graphics Interface 2020, SGP 2019, IJCAI 2019, Graphics Interface 2019, SMI-FASE 2019, CAD/Graphics 2019, ECCV

2018, SMI 2018, CVPR 2018, AAAI 2018 (and also Demos), CAD/Graphics 2017, AAAI 2017 Demos, SIGGRAPH Asia 2016 Virtual Reality Meets Physical Reality Workshop, Eurographics 2015 (State-of-the-Art Reports, Short Papers), 2014 (Short Papers); SIGGRAPH Asia 2014 Workshop on Creative Shape Modeling and Design.

- Reviewer: SIGGRAPH, SIGGRAPH Asia, Transactions on Graphics, CVPR, ECCV, CHI, UIST, NeurIPS, AAAI, Eurographics, Computer-Aided Design, TVCG, Computer Graphics Forum, The Visual Computer, Shape Modeling International, CAD/Graphics, Graphical Models, Transactions on Information Systems.
- Conference Tutorial/Course Instructor:
 - *Learning to Generate 3D Structures*, Eurographics 2019 (with D. Ritchie, K. Xu, and H. Zhang).
 - *The Semantics of Shape*, ICVGIP 2016.
 - *Data-Driven Visual Computing*, SIGGRAPH Asia 2014 (with L. J. Guibas, A. Efros, S.-M. Hu, A. Shamir, K. Xu, and J.-Y. Zhu).
- Workshop Organizer:
 - CVPR 2020 Workshop on *Learning 3D Generative Models*.
 - Tristate Workshop on Imaging and Graphics/SIGGRAPH Papers Committee Workshop, 2014.
- Technical Advisor: Mixamo Inc. (now acquired by Adobe).
- Public-Domain Software: The THEA graphics and geometry processing library, used in Mixamo Inc.'s (now Adobe's) FUSE character modeling tool and various research projects. <https://sidch.github.io/Thea>
- Author: *The Raytracing Repository*, a reference website on raytracing. Cited in university course materials, technical papers and popular science articles. Frequently recommended as a primary resource for beginners.

PUBLICATIONS

1. Hsueh-Ti Derek Liu, Vladimir G. Kim, **Siddhartha Chaudhuri**, Noam Aigerman, and Alec Jacobson (2020). Neural Subdivision. *ACM Transactions on Graphics (Proc. SIGGRAPH)* (to appear).
2. Wang Yifan, Noam Aigerman, Vladimir G. Kim, **Siddhartha Chaudhuri**, and Olga Sorkine-Hornung (2020). Neural Cages for Detail-Preserving 3D Deformations. In: *Proc. CVPR (oral)*.
3. Chenyang Zhu, Kai Xu, **Siddhartha Chaudhuri**, Li Yi, Leonidas Guibas, and Hao Zhang (2020). AdaCoSeg: Adaptive Shape Co-Segmentation with Group Consistency Loss. In: *Proc. CVPR (oral)*.
4. Chu Wang, Babak Samari, Vladimir G. Kim, **Siddhartha Chaudhuri**, and Kaleem Siddiqi (2020). Affinity Graph Supervision for Visual Recognition. In: *Proc. CVPR*.
5. **Siddhartha Chaudhuri**, Daniel Ritchie, Jiajun Wu, Kai Xu, and Hao Zhang (2020). Learning to Generate 3D Structures. *Eurographics State-of-the-Art Reports (STAR)*.

6. Zhiqin Chen, Kangxue Yin, Matthew Fisher, **Siddhartha Chaudhuri**, and Hao Zhang (2019). BAE-NET: Branched Autoencoder for Shape Co-Segmentation. In: *Proc. ICCV*.
7. Priyadarshini K, **Siddhartha Chaudhuri**, and Subhasis Chaudhuri (2019). PerceptNet: Learning Perceptual Similarity of Haptic Textures in Presence of Unorderable Triplets. In: *Proc. World Haptics Conference*.
8. Sanjeev Muralikrishnan, Vladimir G. Kim, Matthew Fisher, and **Siddhartha Chaudhuri** (2019). Shape Unicode: A Unified Shape Representation. In: *Proc. CVPR*.
9. Manyi Li, Akshay Gadi Patil, Kai Xu, **Siddhartha Chaudhuri**, Owais Khan, Ariel Shamir, Changhe Tu, Baoquan Chen, Daniel Cohen-Or, and Hao Zhang (2019). GRAINS: Generative Recursive Autoencoders for INdoor Scenes. *ACM Transactions on Graphics* **38**(2).
10. Chenyang Zhu, Kai Xu, **Siddhartha Chaudhuri**, Renjiao Yi, and Hao Zhang (2018). SCORES: Shape Composition with Recursive Substructure Priors. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)* **37**(6).
11. Hubert Lin, Melinos Averkiou, Evangelos Kalogerakis, Balazs Kovacs, Siddhant Ranade, Vladimir G. Kim, **Siddhartha Chaudhuri**, and Kavita Bala (2018). Learning Material-Aware Local Descriptors for 3D Shapes. In: *Proc. 3DV*.
12. Sanjeev Muralikrishnan, Vladimir G. Kim, and **Siddhartha Chaudhuri** (2018). Tags2Parts: Discovering Semantic Regions from Shape Tags. In: *Proc. CVPR*.
13. Shiv Shankar, Vihari Piratla, Soumen Chakrabarti, **Siddhartha Chaudhuri**, Preethi Jyothi, and Sunita Sarawagi (2018). Generalizing Across Domains via Cross-Gradient Training. In: *Proc. ICLR*.
14. Haibin Huang, Evangelos Kalogerakis, **Siddhartha Chaudhuri**, Duygu Ceylan, Vladimir G. Kim, and Ersin Yumer (2018). Learning Local Shape Descriptors with View-Based Convolutional Neural Networks. *ACM Transactions on Graphics* **37**(1).
15. Minhyuk Sung, Hao Su, Vladimir G. Kim, **Siddhartha Chaudhuri**, and Leonidas Guibas (2017). ComplementMe: Weakly-Supervised Component Suggestion for 3D Modeling. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)* **36**(6).
16. Jun Li, Kai Xu, **Siddhartha Chaudhuri**, Ersin Yumer, Hao Zhang, and Leonidas Guibas (2017). GRASS: Generative Recursive Autoencoders for Shape Structures. *ACM Transactions on Graphics (Proc. SIGGRAPH)* **36**(4).
17. Evangelos Kalogerakis, Melinos Averkiou, Subhansu Maji, and **Siddhartha Chaudhuri** (2017). 3D Shape Segmentation with Projective Convolutional Networks. In: *Proc. CVPR (oral)*.
18. Xuekun Guo, Juncong Lin, Kai Xu, **Siddhartha Chaudhuri**, and Xiaogang Jin (2016). CustomCut: On-demand Extraction of Customized 3D Parts with 2D Sketches. In: *Proc. Symposium on Geometry Processing*.
19. Ersin Yumer, **Siddhartha Chaudhuri**, Jessica K. Hodgins, and Levent Burak Kara (2015). Semantic Shape Editing Using Deformation Handles. *ACM Transactions on Graphics (Proc. SIGGRAPH)* **34**(4).

20. Tianqiang Liu, **Siddhartha Chaudhuri**, Vladimir G. Kim, Qixing Huang, Niloy J. Mitra, and Thomas Funkhouser (2014). Creating Consistent Scene Graphs Using a Probabilistic Grammar. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)* **33**(6).
21. Vladimir G. Kim, **Siddhartha Chaudhuri**, Leonidas Guibas, and Thomas Funkhouser (2014). Shape2Pose: Human-Centric Shape Analysis. *ACM Transactions on Graphics (Proc. SIGGRAPH)* **33**(4).
22. **Siddhartha Chaudhuri**, Evangelos Kalogerakis, Stephen Giguere, and Thomas Funkhouser (2013). AttribIt: Content Creation with Semantic Attributes. In: *Proc. UIST*.
23. Vladimir G. Kim, W. Li, Niloy J. Mitra, **Siddhartha Chaudhuri**, Stephen DiVerdi, and Thomas Funkhouser (2013). Learning Part-Based Templates from Large Collections of 3D Shapes. *ACM Transactions on Graphics (Proc. SIGGRAPH)* **32**(4).
24. Evangelos Kalogerakis, **Siddhartha Chaudhuri**, Daphne Koller, and Vladlen Koltun (2012). A Probabilistic Model for Component-Based Shape Synthesis. *ACM Transactions on Graphics (Proc. SIGGRAPH)* **31**(4).
25. **Siddhartha Chaudhuri**, Evangelos Kalogerakis, Leonidas Guibas, and Vladlen Koltun (2011). Probabilistic Reasoning for Assembly-Based 3D Modeling. *ACM Transactions on Graphics (Proc. SIGGRAPH)* **30**(4).
26. **Siddhartha Chaudhuri** and Vladlen Koltun (2010). Data-Driven Suggestions for Creativity Support in 3D Modeling. *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)* **29**(6).
27. **Siddhartha Chaudhuri** and Vladlen Koltun (2009). Smoothed Analysis of Probabilistic Roadmaps. *Computational Geometry: Theory and Applications* **42**(8), 731–747.
28. **Siddhartha Chaudhuri**, Daniel Horn, Pat Hanrahan, and Vladlen Koltun (2009). *Image-Based Exploration of Massive Online Environments*. Tech. rep. CSTR 2009-02. Stanford University.
29. **Siddhartha Chaudhuri**, Randhir K. Singh, and E. Charbon (2005). Feature-Based Techniques for Real-Time Morphable Model Facial Image Analysis. In: *Image and Video Communications and Processing Conference, IS&T/SPIE's 17th Annual Symposium on Electronic Imaging Science and Technology*. San Jose.
30. **Siddhartha Chaudhuri**, Ratan K. Ghosh, and Sajal K. Das (2005). Towards Optimal Sensor Placement with Hypercube Cutting Planes. In: *IEEE Wireless Communications and Networking Conference (invited paper)*. New Orleans.
31. Manu Chhabra, Anusheel Nahar, Nishant Agrawal, Tamhant Jain, Amitabha Mukerjee, Apurva Mathad, and **Siddhartha Chaudhuri** (2004). Novel Approaches to Vision and Motion Control for Robot Soccer. In: *National Conference on Advanced Manufacturing and Robotics*. CMERI, Durgapur.