# Man-Kwun Chiu

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✆ *https://chiumk.github.io/*

## Work Experience

**2018–Present** **Researcher**, *Institut für Informatik*, Freie Universität Berlin, Germany.
- Researching for the complexity class problems such as TFNP, PPA and PPAD.

**2015–2018** **Project Researcher**, *JST ERATO Kawarabayashi Large Graph Project*, National Institute of Informatics, Japan.
- Researched for the problems about consistent digital segments, geodesic paths in polygonal domain and memory constrained algorithms.

**2014–2015** **Post-doctoral Fellow**, *Hong Kong University of Science and Technology*, Hong Kong.
- Researched for the problem of finding the shortest path in weighted regions.

**2006–2014** **Teaching/Research Assistant**, *Hong Kong University of Science and Technology*, Hong Kong.
- Prepared tutorial materials and gave tutorials to students.
- Prepared and graded written and programming assignments.
- Researched for the problem of reconstructing manifold.

**2004–2005** **Undergraduate Internship**, *Hong Kong and Shanghai Banking Corporation Limited (HSBC)*, IT department, Hong Kong.
- Implemented an activity log query system.

## Education

**2008–2014** **Doctor of Philosophy in Computer Science and Engineering**, *Hong Kong University of Science and Technology*, Hong Kong.
Thesis title: Manifold Reconstruction from Discrete Point Sets

Supervisor : Dr. Siu-Wing Cheng

**2006–2008** **Master of Philosophy in Computer Science and Engineering**, *Hong Kong University of Science and Technology*, Hong Kong.
Thesis title : Dimension Detection via Slivers

Supervisor : Dr. Siu-Wing Cheng

**2002–2006** **Bachelor of Engineering in Computer Science with minor in Mathematics**, *Hong Kong University of Science and Technology*, Hong Kong.
First Class Honors (Grade : 11.39 out of 12)

## Scholarships and awards

**2006** HKUST Academic Achievement Medal
Awarded annually to the top 1% HKUST graduates

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| 2002–2006 | Dean's List: six semesters |
| | Obtained a term grade average of at least 10pt(A-) (12 pt scale) |
| 2006 | Hong Kong Telecom Institute of Information Technology Scholarship ($\approx$ US$4000) |
| 2006 | Wu Ti Hsien Science & Education Foundation Fund Scholarship ($\approx$ US$1200) |
| 2004 | Wu Ti Hsien Science & Education Foundation Fund Scholarship ($\approx$ US$1200) |
| 2004 | The Chinese General Chamber of Commerce Scholarship ($\approx$ US$4000) |

## Publications

### Publications in international journals

[1] Jean-François Baffier, Man-Kwun Chiu, Yago Diez, Matias Korman, Valia Mitsou, André van Renssen, Marcel Roeloffzen, and Yushi Uno. "Hanabi is NP-hard, Even for Cheaters who Look at Their Cards". In: *Theoretical Computer Science* 675 (2017), pp. 43–55.

[2] Siu-Wing Cheng, Man-Kwun Chiu, Jiongxin Jin, and Antoine Vigneron. "Navigating Weighted Regions with Scattered Skinny Tetrahedra". In: *International Journal of Computational Geometry & Applications* 27.01n02 (2017), pp. 13–32.

[3] Siu-Wing Cheng and Man-Kwun Chiu. "Tangent Estimation from Point Samples". In: *Discrete & Computational Geometry* 56.3 (2016), pp. 505–557.

### Publications in refereed conferences

[1] Bahareh Banyassady, Man-Kwun Chiu, Matias Korman, Wolfgang Mulzer, André van Renssen, Marcel Roeloffzen, Paul Seiferth, Yannik Stein, Birgit Vogtenhuber, and Max Willert. "Routing in Polygonal Domains". In: *Proceedings of the 28th International Symposium on Algorithms and Computation (ISAAC 2017)*. 2017, 10:1–10:13.

[2] Paz Carmi, Man-Kwun Chiu, Matthew J. Katz, Matias Korman, Yoshio Okamoto, André van Renssen, Marcel Roeloffzen, Taichi Shiitada, and Shakhar Smorodinsky. "Balanced Line Separators of Unit Disk Graphs". In: *Proceedings of the 15th Algorithms and Data Structures Symposium (WADS 2017)*. Vol. 10389. Lecture Notes in Computer Science. 2017, pp. 241–252.

[3] Man-Kwun Chiu and Matias Korman. "High Dimensional Consistent Digital Segments". In: *33rd International Symposium on Computational Geometry (SoCG 2017)*. 2017, 31:1–31:15.

[4] Jean-François Baffier, Man-Kwun Chiu, Yago Diez, Matias Korman, Valia Mitsou, André van Renssen, Marcel Roeloffzen, and Yushi Uno. "Hanabi is NP-complete, Even for Cheaters who Look at Their Cards". In: *Proceedings of the 8th International Conference on Fun with Algorithms (FUN 2016)*. 2016, 4:1–4:17.

[5] Siu-Wing Cheng, Man-Kwun Chiu, Jiongxin Jin, and Antoine Vigneron. "Navigating Weighted Regions with Scattered Skinny Tetrahedra". In: *Proceedings of the 26th International Symposium on Algorithms and Computation (ISAAC 2015)*. 2015, pp. 35–45.

[6] Siu-Wing Cheng and Man-Kwun Chiu. "Implicit Manifold Reconstruction". In: *Proceedings of the 25th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2014)*. 2014, pp. 161–173.

[7] Siu-Wing Cheng and Man-Kwun Chiu. "Dimension detection via slivers". In: *Proceedings of the 20th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2009)*. 2009, pp. 1001–1010.

## Reviews

I have reviewed papers for the following journals and conferences.

### Journals

Algorithmica

Journal of Computational Geometry (JoCG)

Journal of Information Processing (JIP)

Journal of Information Science and Engineering (JISE)

### Conferences

Algorithms and Data Structures Symposium (WADS)

Canadian Conference on Computational Geometry (CCCG)

European Workshop on Computational Geometry (EuroCG)

International Computing and Combinatorics Conference (COCOON)

International Conference and Workshops on Algorithms and Computation (WAL-COM)

International Conference on Combinatorial Optimization and Applications (COCOA)

International Symposium on Algorithms and Computation (ISAAC)

International Symposium on Computational Geometry (SoCG)

Japan Conference on Discrete and Computational Geometry and Graphs (JCDCG$^2$)

Latin American Theoretical Informatics Symposium (LATIN)

Scandinavian Symposium and Workshops on Algorithm Theory (SWAT)

## Conference presentations

March 2018 **Rectilinear Link Diameter and Radius in a Rectilinear Polygonal Domain**, *the 34th European Workshop on Computational Geometry (EuroCG 2018)*, Berlin, Germany.

July 2017 **High Dimensional Consistent Digital Segments**, *the 33rd International Symposium on Computational Geometry (SoCG 2017)*, Brisbane, Australia.

May 2017 **High Dimensional Consistent Digital Segments**, *the 10th Annual Meeting of the Asian Association for Algorithms and Computation (AAAC 2017)*, HKUST, Hong Kong.

Dec. 2015 **Navigating Weighted Regions with Scattered Skinny Tetrahedra**, *the 26th International Symposium on Algorithms and Computation (ISAAC 2015)*, Nagoya, Japan.

May 2014 **Implicit Manifold Reconstruction**, *the 7th Annual Meeting of the Asian Association for Algorithms and Computation (AAAC 2014)*, Hangzhou, China.

Jan. 2014 **Implicit Manifold Reconstruction**, *the 25th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2014)*, Portland, USA.

Nov. 2013 **Tangent Estimation from Point Samples**, *the ACM-HK Student Research and Career Day 2013*, HKUST, Hong Kong.

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| Apr. 2012 | **Tangent Estimation from Point Samples**, *the 5th Annual Meeting of the Asian Association for Algorithms and Computation (AAAC 2012)*, Shanghai, China. |
| Apr. 2009 | **Dimension detection via slivers**, *the 2nd Annual Meeting of the Asian Association for Algorithms and Computation (AAAC 2009)*, Hangzhou, China. |
| Mar. 2009 | **Dimension detection via slivers**, *the ACM-HK Student Research and Career Day 2009*, Hong Kong Baptist University, Hong Kong. |
| Jan. 2009 | **Dimension detection via slivers**, *the 20th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2009)*, New York, USA. |

## Programming Languages

MATLAB, LaTeX, C++, Java, COBOL, ASP.NET

## Languages

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| Mothertongue | **Chinese (Cantonese)** |
| Fluent | **English, Chinese (Putonghua)** |
| Basic | **Japanese** |