

## Pramook Khungurn

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CONTACT INFORMATION      345 Gates Hall      *E-mail:* pk395@cornell.edu, pramook@gmail.com  
Department of Computer Science      *www:* http://www.cs.cornell.edu/~pramook  
Cornell University  
Ithaca, NY, 14850

INTERESTS      Computer graphics, photo-realistic rendering, appearance acquisition and modeling

EDUCATION      **Cornell University**, Ithaca, New York, USA

Ph.D. candidate in Computer Science, August 2011 - present

- Advisors: Kavita Bala and Steve Marschner
- Thesis Topic: “Modeling Appearance of Hair and Textile Fibers.”
- Expected graduation: June 2017
- GPA: 4.2/4.0

M.S. in Computer Science, February 2016

**Massachusetts Institute of Technology**, Cambridge, Massachusetts, USA

M.Eng. in Electrical Engineering and Computer Science, June 2007

- Advisor: Alan Edelman
- Thesis: “Shirayanagi-Sweedler Algebraic Algorithm Stabilization and Polynomial GCD Algorithms”
- GPA: 5.0/5.0

**Massachusetts Institute of Technology**, Cambridge, Massachusetts, USA

S.B. in Computer Science and Engineering, June, 2006

S.B. in Mathematics, June, 2006

- GPA: 4.9/5.0

PUBLICATIONS

**Khungurn, P.** and Chou, D. Pose Estimation of Anime/Manga Characters: A Case for Synthetic Data. *The First International Workshop on coMics ANalysis, Processing and Understanding (MANPU)*, Decemter, 2016.

**Khungurn, P.**, Schoeder, D., Zhao, S., Bala, K., and Marschner, S. Matching Real Fabrics with Micro-Appearance Models. *ACM Transactions on Graphics (TOG)*, v.35, n.1, December 2015.

Walter, B., **Khungurn, P.**, and Bala, K. Bidirectional Lightcuts. *ACM Transactions on Graphics (TOG)*, v.31, n.4, July 2012.

**Khungurn, P.**, Saranurak, K., and Watcharopas, C. Pixelcuts: Scalable Approximate Illumination from Many Point Lights. *Chiang Mai Journal of Science*, v.38 (Special Issue 2011), pp. 8–16, 2011.

**Khungurn, P.**, Sekigawa, H., and Shirayanagi, K. Minimum Converging Precision of the QR-Factorization Algorithm for Real Polynomial GCD. In *Proceedings of the International Symposium on Symbolic and Algebraic Computation (ISSAC 2007)*, 2007.

**Khungurn, P.** Factoring the Coxeter Element of the Hyperoctahedral Group. *MIT Undergraduate Journal of Mathematics.*, v.7, pp. 59–80, 2005.

UNPUBLISHED  
MANUSCRIPT

**Khungurn, P.**, and Marschner, S. Azimuthal Scattering from Elliptical Hair Fibers. Accepted with minor revision to *ACM Transactions on Graphics (TOG)*.

RESEARCH  
EXPERIENCES

**Department of Computer Science, Cornell University**

Ithaca, New York, USA

*Graduate Research Assistant*

*August 2011 - present*

- Scalable, physically-based rendering algorithms.
- Physically-based appearance modeling of hair and textile fibers.
- Use of synthetic data in 2D articulated human pose estimation.

**National Institute of Informatics**

Hitotsubashi, Tokyo, Japan

*Summer Intern*

*June 2016 - September 2016*

Worked with Prof. Imari Sato on a project to develop a pipeline for acquiring appearance properties of Nishijin-Ori fabrics. (Nishijin-Ori is the name of traditional Japanese woven fabrics manufactured in Tokyo prefecture.)

**Department of Computer Science, Kasetsart University**

Bangkok, Thailand

*Lecturer*

*October 2007 - August 2011*

Pixelcut, a scalable algorithm for approximate rendering of scenes with many point lights.

**Square-Enix Co., Ltd.**

Shibuya, Tokyo, Japan

*Intern*

*February 2007 - April 2007*

Developed a real-time ray tracer for multicore computers.

**NTT Communication Science Laboratory**

Atsugi, Kanagawa, Japan

*Summer Intern*

*July 2006 - August 2006*

Performance and stability of algorithms for computing polynomial greatest common divisor.

**NTT Communication Science Laboratory**

Atsugi, Kanagawa, Japan

*Summer Intern*

*June 2005 - August 2005*

Approximate computation in an algorithm for integrating rational functions.

**MIT Mathematics Department**

Cambridge, Massachusetts, USA

*Undergraduate Researcher*

*July 2004*

Enumerative combinatorics of generalized permutation group.

TEACHING  
EXPERIENCES

**Department of Computer Science, Cornell University**

Ithaca, New York, USA

*Teaching Assistant*

*August 2011 - present*

- CS 4620: Introduction to Computer Graphics (Fall 2011, 2012)  
*Covers both real-time techniques and ray tracing. Undergraduate level.*
- CS 5625: Interactive Computer Graphics (Spring 2015)  
*Advanced real-time rendering using OpenGL. Graduate level.*
- CS 6630: Realistic Image Synthesis (Fall 2015)  
*Physically-based rendering algorithms with focus on Monte Carlo techniques. Graduate level.*

**Department of Computer Science, Kasetsart University**

Bangkok, Thailand

*Lecturer*

*October 2007 - August 2011*

- 418115: Structured Programming (Second\* 2008, 2009, 2010)  
*C programming. Undergraduate level.*
- 418341: Computer Graphics Working Environment (First 2008, 2009)  
*Interactive graphics programming with OpenGL. Undergraduate level.*

- 418342: Web Application Programming (Second 2010)  
*Web application programming with Ruby on Rails. Undergraduate level.*
- 418383: Game Programming (Second 2008, 2010)  
*Game programming with Microsoft XNA and pygame. Undergraduate level.*
- 418512: Computer Programming Languages (First 2011)  
*Python programming for Masters students. Graduate Level.*
- 418531: Data Structures and Algorithm Analysis (First 2008, 2009; Second 2010)  
*Discrete mathematics and algorithms refresher. Graduate level.*
- 418536: Advanced Operating System Administration (Second 2007)  
*Operating systems concepts. Graduate level.*

\*Universities in Thailand have two semesters. The first is from June to September, and the second from November to February of the next year. These are referred to as the “First” semester and the “Second” semester, respectively.

### **Thailand Olympiad in Informatics**

Bangkok, Thailand

*Instructor and Coach*

*May 2007 - August 2011*

- Taught discrete mathematics, data structures, algorithms, and problem solving techniques to participating middle and high school students.
- Prepared students for the International Olympiad in Informatics (IOI) competition.
- Served as a Thai delegate to IOI 2009, 2010, and 2011.

### SERVICES

*Reviewer* for Pacific Graphics 2013, SIGGRAPH 2014, SIGGRAPH 2015, and the Visual Computer.

*Problem writer* for the 2008 Asia Pacific Informatics Olympiad (APIO) 2008.

### HONORS AND AWARDS

Office of Civil Service Commission Scholarship from the Royal Thai Government 2006

Inducted to Phi Beta Kappa, MIT Chapter 2006

Honorable Mention, William Lowell Putnam Mathematics Competition 2005

Honorable Mention, William Lowell Putnam Mathematics Competition 2003

King’s Scholarship from the Royal Thai Government 2001

Silver medal, the 12th International Olympiads in Informatics, Beijing, China 2000

### SKILLS

*Natural Languages:* Thai (native), English (professional), Japanese (JLPT N2)

*Programming Languages:* C, C++, C#, Java, Python, Ruby, Javascript, Scheme, Matlab, GLSL

*API and Libraries:* OpenGL, Mitsuba, scipy, Microsoft XNA, pygame, Ruby on Rails, Caffe

*Software:* L<sup>A</sup>T<sub>E</sub>X, Microsoft Office, Mercurial, Git

*Misc:* Scanning electron microscope operation (LEICA Stereoscan 440)