

# Sungje Cho

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## Education

University of Southern California (USC)	Los Angeles, CA, USA
Ph.D. in Electrical Engineering	Expected May 2010
M.S. in Electrical Engineering (GPA: 4.0/4.0)	May 2007
Pohang University of Science and Technology	Pohang, Kyung-pook, South Korea
B.S. in Electrical Engineering	March 2000
B.S. in Mathematics, Minor in Computer Science	March 2000

## Research Interests

My research interest is the computational approach to the nature of genetics including genome re-sequencing, genome *de novo* sequencing, metagenomic genome *de novo* sequencing, and read mapping. Currently, I am working on metagenomic sequence assembly (<http://scf.usc.edu/~sungjech/metaSEQ/metaSEQ.html>), and I will work for genome re-sequencing by finding long insertion/deletion mutations, SNPs, genome re-arrangement, and so on. All of my work uses *De Bruijn Graph* as a foundation and finds *Eulerian Paths* on it.

## Research Experience

**Computational Molecular Biology and Electrical Engineering,** USC, Los Angeles, CA, USA  
**Research Assistant** (2007 – present)

- *De Novo* metagenomic DNA assembly – This is the first attempt for metagenomic sequence assembly without using databases. Two papers were submitted for RECOMB 2009 and Genome Research.
- DNA re-sequencing with sequencing errors, SNPs, indel mutations, and orientation problems

## Publications

NONE

## Presentations

DNA sequence assembly with short fragments: Eulerian Path Method to Re-sequence (or de novo sequence) a Human Genome with Short Fragments, Group Seminar of Professor Kuo in Electrical Engineering, USC, Los Angeles, CA, USA, Feb. 8 2008

DNA sequence assembly with short fragments: Eulerian Path Method to Re-sequence Especially for Indel mutations, Group Seminar of Professor Kuo in Electrical Engineering, USC, Los Angeles, CA, USA, July 11 2008

*De Novo* Sequence Assembly of Short Regions Metagenomic, Jounal Club of Computational Molecular Biology Department, Los Angeles, CA, USA, Sept. 24 2008

## **Work Experience**

### **Infnis Inc. (<http://www.infnis.com>)**

**Seoul, South Korea**

Researcher and Software Developer

Jan. 2004 – Jun. 2005

- Designed and developed Soligate™ VPN solution based on FreeS/wan

### **FutureSystem Inc. (<http://www.future.co.kr>)**

**Seoul, South Korea**

Researcher and Software Developer

Jun. 2002 – Jan. 2004

- Designed and developed SMTP, POP3 and web proxies for protection against virus attacks and harmful sites as the EzLock project
- **Developed Products:** EzLock focused load balancing for small and medium-sized enterprises; EzLockHE (EzLock Home Edition)

### **N'ser Community Inc. (<http://www.nser.co.kr>)**

**Seoul, South Korea**

Researcher and Software Developer

Jan. 2000 – Jun. 2002

- Researched Bluetooth v1.0 about marketability and realizability. Designed and developed Korea's first H.323 based Multipoint Control Unit (MCU) solution, iNetConference™, Korea's first H.323 based video conferencing terminal, iNetDial™ using H.323 open source (<http://www.openh343.org>)
- **Developed Products:** iNetConerence - H.323 based MCU to hold a meeting among N by N customers under limited network bandwidth through barriers of firewalls; iNetDial™ - H.323 based conferencing terminal solution in which video frames are exchanged according to network capacity

## **Professional Affiliations**

**Samsung Frontiers Membership**

**1999 – current**

**Eta Kappa Nu**

**2007 – 2008**

**Phi Kappa Phi**

**2007 – 2008**

## **Awards, Scholarships and Fellowships**

### **Korea Science and Engineering Foundation Graduate Student Fellowship (2005-2007)**

Merit-based full-tuition and living-cost fellowship; annually awarded to 200 students nation-wide

### **Yookha Foundation for Unification Studies Scholarship (1999)**

Merit-based full-tuition fellowship; annually awarded to 2 students

### **Rotary International Scholarship (1998)**

Merit-based full-tuition fellowship; annually awarded to 2 students

### **POSTECH Labor Fellowship (1997)**

Full-tuition scholarship annually awarded

### **POSTECH Hyungsan Scholarship (1996)**

Full-tuition scholarship annually awarded

## **Honors**

**Award GPA 4.0 Graduation for the M.S. degree from USC, Los Angeles, CA, USA**

**Received Academic Honor Prizes for 6 semesters for the B.S. degree from POSTECH, Pohang, Kyung-pook, South Korea**

## **Service**

Reviewing RECOMB 2009 paper: Osvaldo Zagordi, Lukas Geyrhofer, Volker Roth, Niko Beerenwinkel, “Deep sequencing of a genetically heterogeneous sample: local haplotype reconstruction and read error correction,” RECOMB 2009

## **References**

- Ting Chen ([tingchen@usc.edu](mailto:tingchen@usc.edu)), Associate Professor in Computational Molecular Biology in University of Southern California, Los Angeles, CA, USA
- C.-C. Jay Kuo ([cckuo@sipi.usc.edu](mailto:cckuo@sipi.usc.edu)), Professor in Electrical Engineering in University of Southern California, Los Angeles, CA, USA

- Gunsu S. Yun ([gunsu.yun@lamresearch.com](mailto:gunsu.yun@lamresearch.com)), Senior Process Engineer, Lam Research Corporation, San Jose, CA, USA