How To Successfully Apply To US Universities

Klaus Mueller

Chair Computer Science Department
Vice President Academic Affairs and Finance
SUNY Korea

Professor of Computer Science
Stony Brook University

First a Bit About Me

Education
- BS in Electrical Engineering (Polytechnic University Ulm, Germany)
- MS in Biomedical Engineering (The Ohio State University)
- PhD in Computer Science (The Ohio State University)

Research interests
- computer graphics and human-computer interaction
- visualization, data analytics, and machine learning
- high performance computing and medical imaging

Professor since 1999 – for 15 years
- written over 160 research papers, cited more than 5,500 times
- graduated 12 PhD students and numerous MS students
- now at Facebook, Google, Amazon, Goldman Sachs, Bloomberg,…

So, how to apply for a US university

Step 1: Research the US Universities

There are thousands of colleges and universities in the US
- create a list of the universities you would like to apply to
- select 10-15 universities to get more in-depth information about
- study their websites and those of their CS departments
- pick the right university fitting your interests and also grades

There are many websites to research US universities online:
- www.collegeboard.com
- www.petersons.com
- www.usaeducationguides.com
- www.usnews.com
- www.phds.org

Step 2: Make a Hotlist

Choose 4-6 universities to apply to
- US universities charge a non-refundable application fee
- applying to more than 6 can get expensive

Your shortlist of universities should include:
- 1-2 schools at the top of your range
  - universities that you would very much like to attend
  - but you're not sure that your academic record and test scores meet their expectations
- 2-3 competitive, but not extremely selective schools
  - universities where you're confident that your application will be given serious consideration
- 1 safety school
  - a university that you are certain will accept you, because you clearly meet and exceed their criteria

Criteria for Choosing a University

Undergraduate study:

- majors offered
  - you will apply for a major – there will be other "gen ed" courses
- strength of program (personal impression, rankings)
- selectivity (entrance difficulty)
- cost and availability of financial aid
- accreditation (e.g., ABET)
- academic facilities
- type of institution – public or private, co-ed or single sex, etc.
- enrollment size
- campus setting and geographical location
- sports and campus life
- housing
- services for international students

Criteria for Choosing a University

Graduate study:

- know exactly in what specialty of your field you are interested in
- look for a graduate program recognized as being strong there
- look beyond the famous institutions (Harvard, Stanford, MIT, ..)
- there are many other excellent US schools not (yet) known to you
- the top universities are the most expensive and difficult to enter
- look who is publishing research in your area of interest
- find out where they are teaching
- seek advice from US academics in your field
- seek advice from Korean graduate students in your field who are studying at US schools
- use the internet for up-to-date information on US universities
- some US schools also have campuses in Korea (SUNY Korea)

Step 3: Write a successful application

Background (1)

The admission process of American universities and colleges
- is unlike any other in the world
- is a delicate balancing act that involves many factors

The decisive factors determining your success are
- academic indicators and measurements about you
- characteristics that make you unique
- goals and priorities set by the individual universities and colleges

You need to study each institution to find out
- *if* you fit in
- *how* you can make the admission officer believe that you fit in
- there's a comedy movie about this – 'Admission' with Tina Fey

Background (2)

US universities usually have a set of institutional values that affect who is admitted each year – they may

- strive to enroll a balanced number of freshmen across all academic disciplines
- value students with high levels of co-curricular engagement, leadership and service
- believe it is important to maintain gender balance
- value geographic, national, and ethnic diversity

These institutional needs guide who is ultimately admitted

- can often account for why great students may not be seen as great matches for every college or university
- "John got rejected from Penn State but got accepted to Harvard"

The Application Review

Admission committee members have years of experience in

- reading applications
- understanding the potential of applicants
- making evaluations about which candidates will be match best

Admission decisions are made carefully and professionally

- thus take a few months to decide who will be offered admission
- are done with institutional goals and priorities in mind
- seek to uncover strong reasons to admit you
- are usually not based on numerical formulas or on the results of one comprehensive examination.
- seek to understand the person behind the paper – the "real you"

Admission Criteria for Undergrads (1)

In order of importance

- secondary school achievements (science, math, writing, reading)
- standardized tests (SAT, ACT)
- essays and personal statements (maturity very important)
- letters of recommendation (teachers, mentors, supervisors)
- English language proficiency (grades, TOEFL or IELTS)
- special talents (what are you good at – give evidence)
- activities (clubs, athletics, community, and so on)

All are part of the decision of which applicants to admit

- but each plays a slightly different role in the admission process

Secondary School Achievement

Secondary school achievement

- what are your grades, in-class ranking, and academic level of your courses
- what is your school and its curriculum – is it
  - international
  - American-style
  - just the typical Korean educational sequence
- how many graduates of your school typically go to
  - top Korean universities: Seoul National, Yonsei, Korea, KAIST, ….
  - international universities and which ones
  - US universities and which ones
- have you challenged yourself to the best of your abilities in the context of your school course work

Standardized Aptitude Tests

Standardized aptitude tests – SAT, ACT

- take them well in advance of the application deadline
- study the guidebooks so you are well prepared
- know that there is no universal score or threshold that automatically guarantees or denies admission
- the same is true for your secondary school performance

Essay, Personal Statement

Essay, personal statement
- helps an admission committee understand
  - your personality
  - your perspective on life
  - your special interests, skills, goals, and thoughts
  - your unique qualities
- should reveal more about you as a person and potential member of the university community (recall the university's goals)
- think about what other information an admission committee should know about you
- don't restate what you've already included in other parts of the application.
- it will be the most challenging piece of your application
- therefore start early and plan to work on several drafts before you settle on a final version

Letters of Recommendation

Letters of recommendation

- provide important insights about your academic abilities
- tell about your contributions to your school and your community
- should be written by people who know you well and who can attest to your qualifications
- might ask teachers, college counselors, and even employers
- be sure to tell them what you plan to study in college and give them a brief summary of your accomplishments
- remember to ask them to complete the recommendation well before the deadline so that your application is not delayed

English Language Proficiency Tests

English language proficiency tests

- ensure that English will not be a barrier to your success in college
- even with less than perfect English skills you may still be admitted
- you may be required to get additional language training and practice before engaging in a full course schedule
- this additional training may be provided by the university
- for example, SUNY Korea has an elaborate English as a Second Language (ESL) program
- your English will certainly improve with frequent use and practice

TOEFL and IELTS are the most widely recognized tests

- make arrangements to locate a testing center and take it soon
- study the guidebooks so you are well prepared

Activities, Talents, Interests

School activities and special talents and interests

- writing about them helps admission committees understand
  - how you will spend time outside of the classroom
  - how you might contribute to campus organizations, activities, and teams
- important since US universities have a rich and diverse campus life
  - sports teams
  - orchestra
  - cultural and social clubs
- so if you have a special ability or talent mention and proof it
  - can be athletics, music, art, theater, debate, or a similar area
  - you may even score a scholarship this way
- these special abilities will not replace weak scholarly abilities
  - but they can complement them and give you a competitive edge

Next: successful application to grad school

Graduate Degrees – Masters

Usually requires 2 years to complete (36 credits or so)

- admission standards generally lower than PhD programs
- prior practical experience is sometimes expected

People with masters degrees

- prepare students for work in teams at a company
- can rise faster than people with BS
- typically have higher starting salaries than BS

You can sometimes get a masters degree and then transfer to a PhD program

- SUNY Korea also offers a 5-year combined BS-MS program

Graduate Degrees – Doctoral (PhD)

A PhD is a Doctor of Philosophy

- typically complete your Masters and PhD in the same program

The average length of a doctoral program is 5 to 6 years

- required the completion of a thesis, prelim, and dissertation
- weight is placed upon the development of research competencies and expanding the science

What Are Schools Looking For?

Academic/research potential

- analytical skills
- creativity
- organizational skills
- communication skills (oral and written)
- interest, enthusiasm, commitment
- ability to fit with their learning community

What is Grad School Like?

Productive community of high achievers
- there's no way around it – it is hard work
- can be competitive and stressful
- need to find a fun research topic or the hard work will be painful

But as a reward you will
- be exposed to new and challenging ideas
- meet interesting and varied colleagues
- receive detailed and honest feedback from expert mentors
- gain skills that you would not gain otherwise
  - abilities to do independent research
  - abilities to successfully debate your point of view
  - abilities to converse with highly intelligent people

Graduate Application Review Process

Who will look at your application?

- an departmental admissions committee will create some first ranking and classification
- this is based on department and university standards
- then individual faculty look at applicants to see if they fit their research program

Application Criteria for Grads

GPA
- graduate schools take GPA seriously
- competitive programs may look for GPAs at 3.5 or higher

Letters of Recommendation
- weighted very highly
- usually need 3 letters
- strong letters can compensate for weak GPAs and GREs
- important that your reference knows you well
- only ask for letters from people who will write a positive letter
- ask professors at least 1 month before the deadline
- send a friendly reminder 2 weeks before the deadline

Make the Job Easy for Your Referees (1)

Create a table that states
- the name of the school
- when the letters are due
- if they are supposed to mail the letter to you or to the school
- if the professor is required to use the provided form
- if an online system is used

If on-line form
- type your name and other required info on each (online) form

If mail-in form:
- provide envelopes with postage for each letter

Make the Job Easy for Your Referees (2)

Provide your letter writer with useful information

- what classes you took from them and the grade(s) you earned
- your overall GPA
- a list of courses you have taken and grades earned
- your major (and minor if you have one)
- the titles/abstracts of any research papers you have written
- honor societies to which you belong
- awards that you have won
- activities in which you have participated (and any offices held)
- work experience and volunteer work
- your professional goals
- much of that information can be on your CV

Emphasize Prior Research Experiences

It will score big points with admission committees

- because this is what you are expected to do as a graduate student
- if you have less than stellar grades and/or GRE scores, make sure your research experience is strong
- it will greatly help your application if you have presented papers at conferences or published articles
- ask professors about research opportunities and teaching assistantships
- emphasize your potential to do great research

The Graduate Record Exam (GRE)

Most graduate schools will require you to take it

Consists of three sections:

- verbal reasoning V
- quantitative reasoning Q (measures math abilities)
- analytical writing A (measures abstract thinking)

GRE Scores

- V and Q (130-170) at full point increments
- A (0-6.0) at half-point increments

It is essential to do well to get into most doctoral programs

- Excellent (top 10%)   V (163-170)   Q (165-170)   A (5.0-6.0)
- Competitive (top 25%)   V (158-162)   Q (159-164)   A (4.5)
- Just OK (top 50%)   V (152-158)   Q (153-158)   A (4.0)
- definitely make sure your Q score is > 160

The GRE Test

Some doctoral programs also require the GRE CS subject test

Master's programs are less competitive

- hence lower scores (on each of the tests) are less problematic
- but scores in the 20th percentile or less will make admission unlikely

Usually programs will use a cut off

- if you don't get above a certain score your application may be ignored

So ... prepare well for the GRE!!

- use the many test books available
- take preparation courses
- everyone is doing it

Your Personal Statement (1)

This is a very important component of your application
- prepare a well thought out letter that articulates your interests
- avoid general statements like
  - "I'm really interested in computer science",
  - "I'm a people-person"
- keep it professional and appear mature

Tailor your letter for each program you apply to
- in many ways, you are applying to work in individual labs
- know what the faculty members are researching
- include something in each statement regarding the faculty that you are interested in working with

Keep the letter short - maybe two pages, typed
- proof read and fix all typos

Your Personal Statement (2)

Answer:
- why did you initially pursue computer science
- why do you want to go to graduate school (PhD, MS)

Address any shortcomings
- low GPA, low GRE scores
- if you received poor grades for the first couple semesters/years emphasize the recent work you've done
- explain what you did to remedy the situation
- if you have a high GPA for your last two years of CS classes, be sure to mention this – a positive trend is always good

For PhD the review committee will want to see one thing in particular

- your potential for research, research, research

Your Curriculum Vitae (CV)

An academic resume

- it summarizes your academic and employment history as it pertains to your career in computer science

Topics included:

- educational history
- relevant coursework
- research and teaching experience
- honors and awards
- memberships in professional organizations, publications and presentations
- practical experiences, such as internships and volunteering
- GPA or GRE scores

Make it look professional

Money $$$

Many programs may offer you some financial support

- some programs will support students with "stipends."
- others may offer a "Research Assistantship"
- for a "Teaching Assistantship" you would help a professor teach a course, or perhaps teach a section yourself

Some universities may waive tuition

Find out as much as you can before deciding to join a program

At SUNY Korea

- PhD students receive full funding from day 1
- MS students are often funded as TA or from on-campus research labs

Make Contact with a Potential Professor

Pick professors you are interested in working with
- one of these professors might
  - become your academic advisor and mentor
  - provide your funding from his/her research grants
  - select you from the short list of possibly admitted students

Request more information about their research
- ask if they will be taking graduate students in the upcoming year

A good way to meet them
- attend a professional conference in which they are presenting
- introduce yourself and chat a bit

Timetable for a Fall Semester Application (1)

April-June

- research 10 to 15 universities – your shortlist
- identify financial assistance (university and elsewhere)

July-August

- contact 4 to 6 universities – your hotlist
- request application forms, financial aid forms and any other forms for international students
- register for tests (GRE, GRE CS subject, TOEFL or IELTS)

August-October

- fill out application forms (most often online)
- collect all required material (transcripts, references)
- start writing your application essay/personal statement
- identify the application deadlines (can be as early as November)

Timetable for a Fall Semester Application (2)

October-February

- submit applications before the deadline
- make sure all transcripts, scores and reference letters are sent

March-May

- notification of acceptance
- notification of rejection may take longer in borderline cases
- you will also find out about any financial aid you might qualify for
- write to the university you decide to attend that you accept
- also write to the other universities that accept you and inform them about your choice
- think about travel arrangements and look for flights

June-August

- obtain a student visa (F-1 or J-1)

Visa

F-1 visa (aka student visa)
- allows foreigners to legally pursue education at US universities
- students must maintain a full course of study
- only issued in US embassies and consulates outside the US
- students receive an I-20 form to apply for an F-1 visa
- dependents of F-1 students can apply for F-2 visa
- only on-campus employment of 20 hours/week or less
- 12 months Curricular Practical Training (CPT)
- 29 months Optional Practical Training (OPT) for STEM students
- OPT requires at least 9 months of study on a US campus

J-1 visa (aka exchange visitor visa)
- for cultural exchange and government programs (e.g. Fulbright)
- students receive a DS-2019 form to apply for a J-1 visa
- often imposes a two-year home residency requirement

Example – SUNY Korea

SUNY Korea Campus

SUNY Korea – A Personal Experience
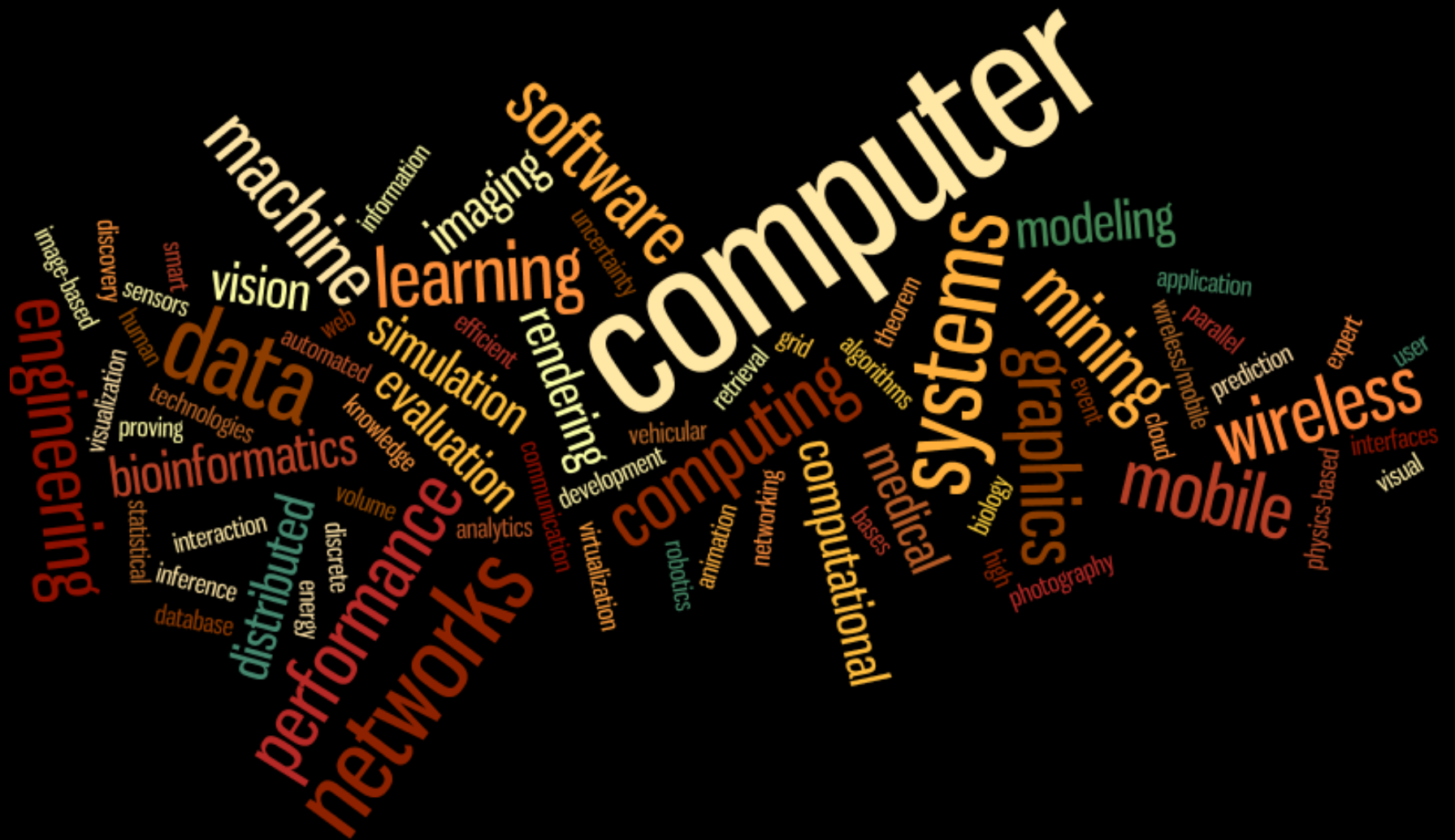
SUNY Korea – Nurturing Creativity
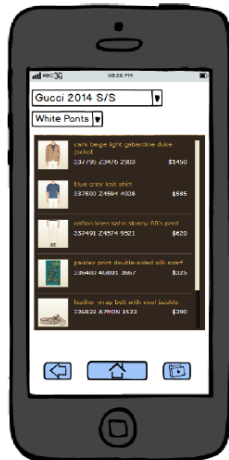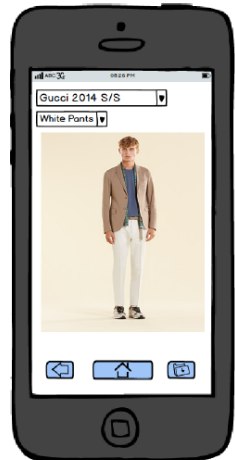
Your Degree – From Stony Brook University
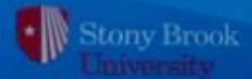
State University of New York

State University at Stony Brook

On the recommendation of the Faculty and by virtue of the authority
vested in them the Trustees of the University have conferred on

Your Name Here

the Degree of

Bachelor of Science
Master of Science
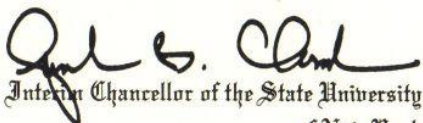Doctor of Philosophy

and have granted this Diploma as evidence thereof
Given at Stony Brook, in the State of New York, in the United States of America
on the twenty-third day of May two thousand eight.

Chairman of the Board of Trustees

Chairman of the Council,
State University at Stony Brook

Interim Chancellor of the State University
of New York

President,
State University at Stony Brook

Stony Brook University

All students will spend 1-2 years there....

Stony Brook University – Facts

Flagship university of the SUNY system

- SUNY – State University of New York
- SUNY – the largest university system in the US
- Stony Brook University – #2 US public university after UC Berkeley

Computer Science @ Stony Brook

- top 15 of all US graduate schools (Princeton, Harvard, Stanford, …)
- the president of Stanford is a Stony Brook CS alumnus
- nearly $10,000,000 research funding
- 35 faculty
- 900 undergrad and graduate students
- one of the largest departments at Stony Brook (3%)

Example – PhD at SUNY Korea

earn Stony Brook degree

first semesters, w/stipend

find research advisor at any of the two institutions

optional studies and research at Stony Brook for 1-2 years

Example – MS at SUNY Korea (1)

earn Stony Brook degree

1 semester

2 semesters

find research advisor at any of the two institutions

Example – MS at SUNY Korea (2)

earn Stony Brook degree

2 semesters

find research advisor at any of the two institutions

2 semesters

Example – MS at SUNY Korea (2)

earn Stony Brook degree

2 semesters

find research advisor at any of the two institutions

2 semesters

References

On education system differences – US vs. Korea

- http://www.eatyourkimchi.com/differences-between-north-american-and-korean-students/

On application process

- http://www.fulbright.org.nz/studyus/applying/

On visa process

- http://www.universitiesintheusa.com/usa-student-visa.html

Visit my Webpage at SUNY Korea...

http://www.cs.sunykorea.ac.kr/~mueller