Pursuing your MS in Information Systems in Silicon Valley

Northeastern University
College of Engineering

coe.neu.edu
AGENDA

Presentation Topics:

• The Program
• The Place
• The People
What to Expect

• Listen-only mode; turn off mic and camera

• Type your questions into the chat window

• Your host: Jeffrey Hengel, Director of Admissions

• Featuring: Dr. Kal Bugrara, Program Director and Ms. Christina Dang, Assist. Dir. Student Services

• 40 minute session with 10 minutes for Q&A
Congratulations and welcome to MSIS!

- Northeastern University ranked in the top **50** for research institutions
- NU also ranked **#1** in career services and has over **100 years** of cooperative educational (co-op) experience
- A top Engineering College!
- 3 campus locations
  - Boston
  - Seattle
  - Silicon Valley
Information Systems—MS
Graduate Program Director, Faculty Member

Dr. Khaled “Kal” Bugrara
MSIS Degree Plan in Silicon Valley

One Core Required Course (4 credits)
INFO 5100 Application Engineering and Development

Elective Courses (28 credits)

32 credit hours in 20 months = MSIS
Sample Degree Plan

- 2 On-Ground Courses per Term
- Summer Term is optional; Virtual Courses available
Information Systems and Computer Systems Engineering

Kal Bugrara, Phd
Program Director
Who We Are

Located at the intersection of cutting-edge technology and business complexity, we currently offer an MS degree for engineering professionals seeking to advance their studies in this exciting software engineering field.

We follow a system’s engineering paradigm to solving complex problems
Forces at Work

- Businesses (and life) going digital
  - Digital business is creating new ways of generating revenues
  - Small players are chipping away at stable source of revenues for big players
  - Being nimble and agile is the way to go
    - Technology and data as the foundation for making good decisions
  - Social challenge

- Virtual Currency (internet of value)

Software engineers at the center of the next revolution
Software Engineering: A Balancing Act

- IT Management
- Real World Complexity
- Software methods and Tools (Engineering)
A Socio-Technical Paradigm for Smart Communities and Society Change
Example of Eco-systems projects in the Application Engineering class

- Blood Supply Eco-system for the Red Cross
  - Blood products have global visibility
- A world-wide inventory system where suppliers monitor on the shelf-products in real-time
- Same-day delivery for Amazon
- Fighting drug-counterfeit crimes world-wide or protecting the drug supply chain
- Vaccine Supply System for CDC, states, as a cooperation between Pharma companies, distribution systems, hospitals, and doctors
- Management of expensive medical devices in the Boston area involving multiple hospitals
- Healthcare Information Exchanges of Patient Data across the US
Socio-Technical (Smart) Systems

• Software engineering
  – How to build socio-technical software systems (platforms) at eco-system scale?
    • For IOT connectivity of everything
    • Smart Cities (health, financial, environment, social, etc.)

• Machine Learning (Engineering)
  – Data Engineering pipelines, statistical learning, feedback loops, and UI Design for ML

• Artificial Intelligence
  – NLP/NLU, Inferencing, cognitive computing
SV Program Offerings (Foundations)

• Application Engineering And Development (INFO 5100)
• Program Structure and Algorithms
• Web Design and User Experience Engineering (INFO 6150)
• Web Methods and Tools (INFO 6250)
• Advances in Data Sciences (INFO 7390)
• Engineering cyber-secure Application Systems (INFO 7300) [4cr]
• Special Topics in NLP and Cognitive Computing
Blockchain Focus

- Cryptocurrency and Smart Contracts (INFO 7500) [4cr]
- Advanced Topics in Cryptocurrencies (INFO 7520) [4cr]
- Smart Contract Application Engineering and Development (INFO 75010) [4cr]
- Regulatory Aspects of Smart Contract Automation (INFO 75025) [2cr]
- Digital Smart Contracts Product Innovations (INFO 7530) [2cr]
BLOCKCHAIN For Financial Services
Blockchain Potential Applications & Disruption

The blockchain is radically changing the future of transaction-based industries.
Business Networks, Markets & Wealth

• Businesses don’t exist in isolation
  – Connected to customers, suppliers, banks, partners etc. through Business Network
  – Networks cross geography & regulatory boundary

• Wealth is sum total of value of goods & services across business network
  – Growth constrained if silo’d or inefficient

• Flow goods & services across business network is a Market
  – OPEN (fruit market, outcry commodities, or
  – CLOSED (supply chain financing, bonds)
Transferring Assets, building Value

• Anything that is capable of being owned or controlled to produce value, is considered an asset
  – can be tangible or intangible
  – value can be converted into cash.

• Cash also an asset.

• Asset examples:
  – Property
  – Bonds, securities, repurchase agreements (intangible)
  – Licenses & patents (intangible assets)
  – Music, video, games (intangible, digital)
Participants, Transactions & Contracts

• A **participant** is a member of a business network
  – Customer, Supplier, Government, Regulator
  – Usually reside in an organization
  – Have specific identities and roles

• A **transaction** is an asset transfer between two or more participants, for example

• A **contract** is set of conditions under which transactions occur, for example
Blockchain in a nutshell

- Append-only system of record shared across business network
- Ensuring secure, authenticated & verifiable transactions
- All parties agree to network verified transaction
- Business terms embedded in transaction database & executed with transactions

Broader participation, lower cost, increased efficiency
Distributed Ledger - Components

- Independent permissioned blockchain
- Distributed virtual machine (Turing-complete)
- Network achieves settlement finality
- Smart contracts govern off-chain assets

Questions?
The Power of the Network

Northeastern University
Silicon Valley

BOSTON | CHARLOTTE | SEATTLE | SILICON VALLEY | TORONTO | ONLINE
SILICON VALLEY CAMPUS PROGRAMS

- MSCS | Master’s of Science Computer Science
- ALIGN | Master’s of Science Computer Science
- MSIS | Master’s of Science Information Systems
- PJM | Master’s of Project Management
- LEVEL | Data Analytics
- LEVEL | IoT
- Semester in Silicon Valley (Undergraduate)
- 150+ Online
Welcome to California

NU Silicon Valley Facebook Group
https://www.facebook.com/groups/366734983718308/

• Relocating to Silicon Valley
  http://www.northeastern.edu/siliconvalley/student-resources/relocating-to-silicon-valley/

• New Students http://www.northeastern.edu/siliconvalley/student-resources/new-students/

• Husky Cards

• Current Students http://www.northeastern.edu/siliconvalley/student-resources/current-students/
• Arrival Into Major Bay Area Airports
  • Mineta San Jose International Airport (SJC)
  • San Francisco International Airport (SFO)
• Transportation to San Jose
• Orientation: TBD
• Registration
• Billing & Payment
• Housing
• Immunization & Health Insurance
• Job Opportunities & Co-op
Co-op is a powerful learning model that integrates classroom learning with real world experience

7,900 Student placements in 2013-2014
3,000+ Employers around the world—on all 7 continents and in over 150 countries

Renowned Co-op Employers Include:
• Apple
• European Union
• The White House
• General Electric
• United Nations

Local Co-op Employers Include:
• Google
• EMC Corporation
• Facebook
• Intuit
• Symantec
• Tesla Motors
P.K. Agarwal
Regional Dean & CEO

He also serves as the Chairman of Future 500, a Bay Area-based pioneer in the area of global sustainability. Formerly, he was the CEO of TiE Global, an organization dedicated to fostering entrepreneurship across 61 cities in 18 countries. Prior to TiE, P.K served as Governor Arnold Schwarzenegger’s Chief Technology Officer for the State of California. He has also been in executive and management roles with ACS (now Xerox), NIC Inc., and EDS (now HP).

PK (as he is famously known) helped pioneer the use of Internet in government and shaped the national and state policy in this area, dating back to Al Gore’s National Information Infrastructure Advisory Council in 1995. He had the unique distinction of having a U.S. national annual award named as the “P.K. Agarwal Award for Leadership in Electronic Government.” He also served as the president of the National Association of State CIOs and the National Electronic Commerce Coordinating Council (ec3). He is a fellow of the National Academy of Public Administration and an adjunct faculty at USC and USF.

PK is an alum of IIT Delhi and UC Berkeley.
SILICON VALLEY

Adding unique value to the Bay Area

- Contributing as an engine for economic development
- Meeting talent gap needs in innovative ways that speak to the individual, employers, and the region
- Bringing talent to the region through co-op and student inflow
- Creating an innovation pipeline networked to Boston, Seattle, Charlotte, Toronto and other key regions
SILICON VALLEY

About the Hub

- First hub to be co-located with an entrepreneurial and widely respected industry and research partner, *Integrated Device Technology*, a company led by a Northeastern alum who understands the importance of facilitating real-world tech education in this region.
SILICON VALLEY

Study in the High Tech Capital

Northeastern University
SILICON VALLEY

The Advantage

- Largest cluster of technology companies worldwide
- Highest concentration of venture capital funding
- World-Class Academics and R&D resources
SILICON VALLEY
Arrive at the Center of the STEM Revolution

• 33% Share of regional job openings that prefer or require an advanced degree

• 6000+ Northeastern alumni who live in the Bay Area

• 150+ Degree programs and certificates offered in onsite, online and/or hybrid formats
SILICON VALLEY

Invested in Your Success

Northeastern University
Investing in Your Career

• Tuition ($1523 per credit hour x 32 credits for MS)

• Health Insurance (about $2100 per year)

Return on Investment

• Get the CAREER you WANT!

• Knowledge Development—Latest Innovations

• Skills Development—Complex Problem Solving, Critical Thinking, Expertise

• Link to Field—Co-op, Knowledge and Skills Application

• Alumni Connections—Corporate, Industry, Government Connections
## Year 1 Estimated Expenses

<table>
<thead>
<tr>
<th></th>
<th>Boston</th>
<th>Seattle</th>
<th>Silicon Valley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and Fees</td>
<td>$24,868</td>
<td>$24,588</td>
<td>$24,588</td>
</tr>
<tr>
<td>Living Expenses*</td>
<td>$17,784</td>
<td>$17,784</td>
<td>$18,464</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$42,652</strong></td>
<td><strong>$42,372</strong></td>
<td><strong>$43,052</strong></td>
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*Please note that living expenses includes room & board, personal expenses, books and health plan.*
Funding Your Degree

• Personal/family funds

• Education loans (Private)

• Cooperative education (Co-op)

• Part-time work

• COE Leaders and Scholars Award for IS-SV Fall 2017 Enrollees! (up to 10% of total tuition costs)
Engineering Graduate Co-op

Combines academic study with career related employment. Graduate Engineering students in co-op is increasing - 400+ placements last year.

Active Employers: 120+
Amazon, Bose Corp, EMC, IBM, Cisco Systems, Verizon

Students’ Hourly Salary: $18-$35/hour

Requirements apply; positions not guaranteed.
Co-op is Career Preparation

- Career Development/Readiness
- Self-Assessment/Goal Setting
- Exploring Industries, Careers, Job Fit
- Co-op Search Preparation & Placement
- Integrate academic experience and industry experience
Eligibility Requirements for Co-op

- Completed 16 Semester Hours – (4 courses)
- Successfully passed Co-op prep course
- Must be in “Good Academic Standing” – GPA must be 3.00 or higher
- Must have at least one course left for your degree
Course Topics

• Resumes, Job Search, and Career Fairs
• LinkedIn Profiles and Cover Letters and Networking Letters
• Interviewing and Thank You Letters
• U.S. Immigration Policy
• Mindset, Mindfulness, and Motivation
• Engineering Ethics, Diversity, and Professional Behavior and Diversity
Your Co-op Faculty Advisor is your....

- Instructor
- Coach
- Partner
- Motivator
- Trainer
<table>
<thead>
<tr>
<th>Actual Co-op Jobs</th>
<th>Northeastern University College of Engineering</th>
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</thead>
<tbody>
<tr>
<td>Associate Software Engineer</td>
<td>Global Tools Intern</td>
</tr>
<tr>
<td>Back End Java Developer</td>
<td>Industrial Engineer</td>
</tr>
<tr>
<td>Backend Java Developer Intern</td>
<td>Information Security Operations Analyst</td>
</tr>
<tr>
<td>Big Data, Social Business, and Knowledge Intern</td>
<td></td>
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<tr>
<td>Business Analyst Intern</td>
<td>Intern in GM Chief Admin Officer</td>
</tr>
<tr>
<td>Business Analyst Intern</td>
<td>iOS Mobile Application Developer</td>
</tr>
<tr>
<td>Business Intelligence Developer</td>
<td>IT Consultant</td>
</tr>
<tr>
<td>Business Systems Analyst</td>
<td>IT Data Scientist Co-op</td>
</tr>
<tr>
<td>Clinic Administrative Operations Co-op</td>
<td>IT Intern</td>
</tr>
<tr>
<td>Cloud Software Engineer</td>
<td>Java Developer</td>
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<tr>
<td>College Co-op</td>
<td>Java Developer Co-op</td>
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<tr>
<td>College Intern</td>
<td>Junior Big Data Developer</td>
</tr>
<tr>
<td>Consumer Analytics &amp; Insights Co-op</td>
<td>Junior Quality Software Engineer</td>
</tr>
<tr>
<td>Controls Department Co-op</td>
<td>Junior Software Engineer</td>
</tr>
<tr>
<td>Co-op Intern</td>
<td>Lab Manager Intern</td>
</tr>
<tr>
<td>Corporate Sales and Marketing Intern</td>
<td>Lean Engineer</td>
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<tr>
<td>Data Analyst</td>
<td>Manufacturing Engineer</td>
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<tr>
<td>Data Analyst Intern</td>
<td>Manufacturing Operations Co-op</td>
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<tr>
<td>Data Engineering Intern</td>
<td>Market Analyst</td>
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<tr>
<td>Data Management Assistant</td>
<td>Marketing and Business Development</td>
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<tr>
<td>Data Management Business Analyst</td>
<td>Marketing Visualization Co-op</td>
</tr>
<tr>
<td>Data Management/Visualization Co-op</td>
<td>Mechanical Co-op</td>
</tr>
<tr>
<td>Data Manager</td>
<td>Metadata Intern</td>
</tr>
<tr>
<td>Data Scientist</td>
<td>MIS Intern</td>
</tr>
<tr>
<td>Data Scientist Intern</td>
<td>Network Trainee Engineer</td>
</tr>
<tr>
<td>Data Steward Co-op</td>
<td>NSX Scale Software Engineer</td>
</tr>
<tr>
<td>Data Warehouse/BI Developer</td>
<td>Operations Improvement Data Analyst</td>
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<tr>
<td>Database Developer</td>
<td>Product Management Co-op</td>
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<tr>
<td>Delivery Engineer</td>
<td>Professional Co-op Associate</td>
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<tr>
<td>Design Verification Engineer</td>
<td>Programmer Intern</td>
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<tr>
<td>DevOps/Quality Engineer</td>
<td>Project Assessment Intern</td>
</tr>
<tr>
<td>Digital Analyst</td>
<td>Project Management Intern</td>
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<tr>
<td>eCommerce Rotational Co-op</td>
<td>QA Engineering Intern</td>
</tr>
<tr>
<td>Energy Efficiency Consultant</td>
<td>QA Intern</td>
</tr>
<tr>
<td>Energy Efficiency Co-op</td>
<td>Quality Assurance Co-op</td>
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What’s next?

- Determine your questions and contact staff and faculty referenced in this presentation

- Join Facebook page for SV students; moderated by currently enrolled students

- You will soon receive a survey via email where you can indicate your interest in pursuing your MSIS degree in Silicon Valley by June 1 preferably

- If you opt-in for IS-SV program, a new letter of acceptance will be provided including guidance about the I-20 process for international students
Your Advising Team

Prof. Kal Bugrara, k.bugrara@northeastern.edu
*Program Director and Faculty Member*, point of contact for program-related questions

Prof. Tristan Johnson, tri.johnson@northeastern.edu
*Faculty Member and High Administrator*, point of contact for program-administration related questions

Ms. Tricia Dowd, p.dowd@northeastern.edu
*Assistant Dir.-Academic Operations*, point of contact for course registration

Mr. Matthew Lenda, m.lenda@northeastern.edu
*Co-op Operations Manager*, point of contact for graduate co-op program

Ms. Christina Dang, c.dang@northeastern.edu
*Assist. Dir. Student Services*, point of contact for SV campus

Mr. Jeffrey Hengel, j.hengel@northeastern.edu
*Dir. of Admissions*, point of contact for admissions record, SV scholarship
Visit & Bookmark These Sites

Electronic Application:
https://app.applyyourself.com/AYApplicantLogin/fl_ApplicantConnectLogin.asp?id=neu-grad

MSIS Degree Requirements:
http://www.coe.neu.edu/degrees/master-science-information-systems

Course Catalog & Class Schedule:
http://www.northeastern.edu/registrar/

Graduate Engineering Co-op:
http://www.coe.neu.edu/co-op-advantage/graduate-co-op

Northeastern University – Silicon Valley
http://www.northeastern.edu/siliconvalley/
Questions?