IC-UNICAMP

50 years
COMPUTING

1969 - 2019

Institute of Computing
Education and Research – back, now and then

Prof. Dr. Anderson Rocha (Director)
Prof. Dr. Leandro Villas (Associate Director)
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Institute of Computing
University of Campinas (Unicamp)

Av. Albert Einstein, 1251 – Cidade Universitária
CEP 13083–970 • Campinas/SP – Brasil
Campinas, Unicamp, and the Institute of Computing
Where are we?
Where are we?

~2.6 Million People (Metro Region) 9th

~20 Million People (Metro Region) 1st
Campinas
“The Brazilian Silicon Valley”
Unicamp

1,900+ Faculty

8,000+ Staff

#1 University in Patent Filings

#1 pub/professor rate

36,000+ Students

17,000+ Grad

19,000+ Undergrad

Annual Budget
~0.9 Billion USD
Unicamp
Who are we?
The Institute of Computing

2 Undergraduate Courses
Computer Science & Computer Engineering

50-year old
Computer Science Course

2 Graduate Courses
Masters and Ph.D. in Computer Science

Strong International Collaboration
Fact Sheet

Graduate Continued Education Courses

Software Engineering

Reasoning for Complex Data | Machine Learning

Computer Networks

Internet of Things
Fact Sheet

1

First undergraduate CS program in Brazil: 1969
Ranked among top CS/CE programs in Brazil

Faculty
Most are CNPq Research Awardees

50

Extensive Collaboration with Industry
Microsoft, Intel, IBM, Petrobras, Google, LG, Samsung, Motorola, Lenovo, among others

Numerous Awards
Best theses, dissertations, papers
Prestige 7 Capes!
Concentration Areas
The Institute of Computing

- Data Science & Engineering
- Software Engineering
- Data Mining
- Human-Computer Interaction
- Algorithms & Graph Theory
- Combinatorics & Optimization
- Computational Biology
- Hardware-Software Codesign
- Computer Architecture
- VLSI Design
- Compilers
- Parallel Computing
- Artificial Intelligence
- Machine Learning
- Big Data

- Wearable Computing
- Distributed Systems
- Computer Networks
- Cloud Computing
- Sensor Networks
- Natural Language Processing
- Cryptograph
- Computer Security
- Computer Graphics
- Computer Vision
- Digital Forensics
- Information Retrieval
- Image Processing
- e-Science
- Robotics
Research Labs.
Impact

\[
\begin{align*}
\text{R$ Million} & \quad 50 \\
\text{Fapesp Thematic Projects} & \quad 6 \\
\text{Projects with the Industry} & \quad 10
\end{align*}
\]
Highlights

Open-Set & Meta-Recognition Image Forest Transform

Intl. Competition on Melanoma Detection

Non-separating Planar Chains in 4-Connected Graphs

Research on Optimization (e.g., Taxi and Ride Sharing)

Implementation of Spelling Checkers

Tomasz Kowaltowski
Cláudio L. Lucchesi
Highlights

**IEEE Transactions on Computers**

Reliable Routing Approach for In-Network Aggregation in Wireless Sensor Networks

López-Dahab Cryptographic Method

National Order of Scientific Merit
Tomasz Kowaltowski
Cláudio L. Lucchesi
Claudia M. Bauzer Medeiros

Visual Analysis of Document Collections – Phylogenetic Trees

Seismic Data Processing

Scheduling in Hybrid Clouds

Institute of Computing, Unicamp, 2019
Projects

WASIS – Wildlife Animal Sound Identification System

Diabetic Retinopathy Detection

Sensitive Media Analysis

CEPID Fapesp

FUTEBOL
Federated Union of Telecommunications Research Facilities for an EU-Brazil Open Laboratory

Institute of Computing, Unicamp, 2019
Projects

Petrobras High-performance Computing

Shell Seismic 4-D Analysis

ERC FAPESP/Equinor
Data-driven technologies for oil-recovery

FAPESP Thematic

Shell Brasil
MACHINE
LEARNING
FOR PRE-SALT
Projects

Thematic Fapesp

Sistemas Socioenativos

Thematic & PIPE Fapesp

LIDS

AnimaLS

DARPA

MediFor

European Union H2020

IDENTITY

Fapesp

Cutting and Packing Problems

FAPESP Thematic

Déjà Vu
Competitions & Contests

Innovative student projects engaged in international competitions

Faculty with strong leadership organizing Local Chapters

Prof. Ricardo Anido
Brazilian Olympiad in Informatics

Prof. Rodolfo Azevedo
Brazilian Programming Contest
Summer School for the Programming Contest

Prof. Esther Colombini
Brazilian Robotics Olympiad
1,200 Students
Institute of Computing, Unicamp, 2019

Graduates/Year

300

90 Undergrads | 40 MSc. | 20 Ph.D. | 150 Cont'd Education
Enrollment Numbers

Undergraduate Studies
- Computer Science: 250
- Computer Engineering: 520

Graduate Studies
- M.Sc.: 150
- Ph.D.: 170

Continued Education
- Complex Data: 45
- Software Eng.: 50
- Networks: 40
- IoT: 60
Alumni

Bachelor Alumni

Graduate Alumni

Graduate Alumni

Computer Science
Computer Engineering

Ph.D
M.Sc.

Continued Education
… and they fly
Where do they go?

**Hired** by Corporations
- Intel, Microsoft, Google, Facebook, IBM, AMD, Motorola, Samsung, LGE, etc.

**Founded** their own companies
- CI&T, Compera, MeuCarrinho, Pro-Fusion, among others

**Joined** other universities for further studies
- Princeton, Yale, Cornell, CalTech, Cambridge, UCLA, UC Irvine, Columbia, etc.

**Joined other universities as professors**
- Top universities in Brazil, Canada, U.S., UK, France, Germany, Australia, Argentina, among others.
Innovation Impact

“Unicamp children”

Entrepreneurship

Economic Motors

Startups!

Unicorns!
Economy Motors!
+1.5 billion USD
Worldwide Players!
FUTURE
CSHub
Computer Science Hub
Partnerships
Stronger Impact & Innovation
Obrigado!

Thank you!
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