Center for Engineered Natural Intelligence

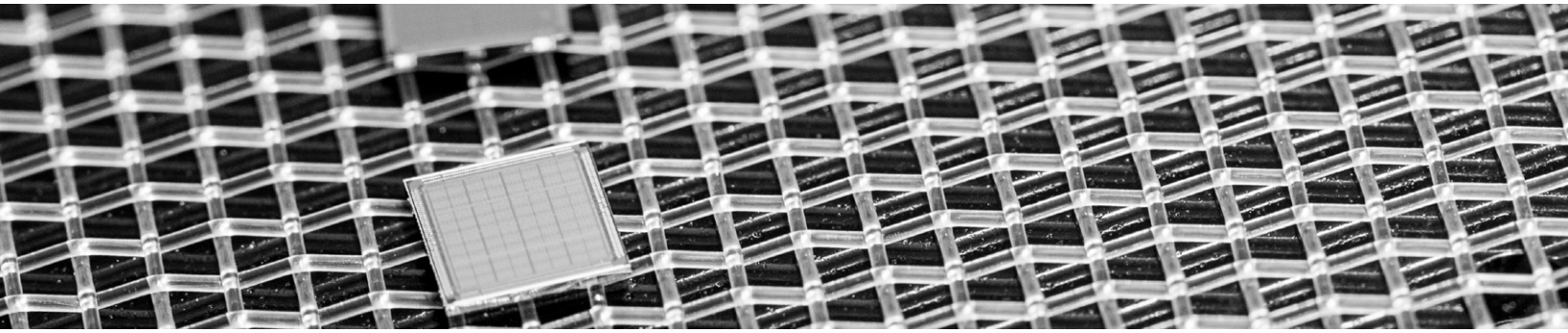
UC San Diego
JACOBS SCHOOL OF ENGINEERING

WE DEVELOP NATURAL INTELLIGENCE FOR MACHINES

Our artificial intelligence systems are built on **algorithms we abstract** from the biological brain.

The work is grounded in new research on how the **biological brain manipulates data and learns**.

The math underlying our methods and algorithms reflects **new discoveries** in information processing and cognition.



ANOMALOUS PATTERNS

We build systems for autonomous detection of anomalous patterns in situations with new inputs and no prior learning. Cybersecurity and big-data analytics are applications.

INFORMATION BREAKDOWN

We are forging a new understanding of neural computation, and its breakdown in information-processing disorders such as autism. Our work links engineering and neuroscience.

ACCOUNTABLE ALGORITHMS

We are moving past the black box of today's Deep Learning networks. Our accountable algorithms will learn and make decisions with mechanistic and logical transparency.

MACHINES WITH IDEAS

We are enabling machines to generate original ideas and think on their own. Our custom hardware and software will solve problems in new situations using real-time context.

We leverage our unique expertise to help industry partners identify and solve their toughest challenges.

Instead of relying on 1950s neuroscience, we recognize the distinct advantages of designing algorithms derived from the most updated insights on how the biological brain learns and manipulates data and information.

Gabriel Silva, Center Director

CENTER LEADERSHIP

Gabriel Silva
Center Director
Bioengineering Professor

Development of mathematical models, algorithms and software derived from the biological brain for advanced contextual artificial intelligence and computational neuroscience.

Tim Gentner
Psychology and Neurobiology Professor

Representational coding of auditory objects, behavioral mechanisms of auditory perception and cognition, neural mechanisms and decision processes.

Gert Cauwenberghs
Bioengineering Professor

Brain dynamics of human motor control, neuromorphic systems engineering, micropower VLSI integrated circuits and sensors, event-driven and adaptive intelligent systems.

Henry D.I. Abarbanel
Physics Professor
Scripps Institution of Oceanography

Applications of contemporary developments in dynamical systems and nonlinear dynamics to problems of physical interest in fluid and plasma physics.

BENEFITS OF PARTNERSHIP

We work collaboratively with our industry partners to identify and solve their toughest challenges.

Opportunities include:

- Industry-faculty-student research teams
- Recruit our top students
- Collaborate one-on-one with faculty
- Embed a visiting Industry Fellow in our labs
- Research Reviews
- Fast-track research agreements
- Access to commercialization engine with lab-to-market focus

JOIN US.

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