ACADEMIC SEMINAR · STATISTICS & MACHINE LEARNING

David Blackwell

The Mathematician Who Predicted AI

On the man, the math, and our future

Compiled by Hedibert F. Lopes, PhD, ISI and ISBA Fellow – April 26th 2026.

Inspired by the documentary · Game of Genius (2026)

AT A GLANCE

An American Genius, Almost Forgotten

22

Age at Ph.D. (1941)

University of Illinois

1954

First Black professor

in the University of California system

8

Children raised

with his wife Ann, a classically trained pianist

A prodigy from segregated Illinois who earned his Ph.D. at 22, Blackwell went on to develop what would later be called dynamic programming and, mathematically, how machines could learn from experience — work that quietly underpins modern economics, computing, and artificial intelligence.

From Segregated Illinois to Berkeley

1919

Born in Centralia, Illinois

in a segregated America.

1941

Ph.D. at age 22

University of Illinois — among the youngest in the nation.

1944

Joins Howard University

becomes chair of the Math Department.

1954

First Black professor at UC

the same year as Brown v. Board.

2010

Passes at age 91

his ideas already shaping the AI era.

Brown v. Board of Education (1954) struck down legal segregation in U.S. public schools — the same year Blackwell joined Berkeley.

FAMILY & LIFE

A Life Beyond the Blackboard

With his wife Ann, a classically trained pianist, Blackwell raised eight children while advancing a new mathematics of intelligence.

He was, by every account from those who knew him, a generous mentor and a singularly elegant teacher — qualities that fed back into work whose simplicity has long outlived its era.

AT HOME

8

children raised

with his wife Ann

a classically trained pianist

What He Built

Three threads that braid into a single insight: that intelligence can be learned, not preprogrammed.

01

Dynamic Programming

Optimal sequential decisions under uncertainty. The mathematics of choosing now while accounting for what may follow — the bedrock of reinforcement learning and adaptive control.

02

Learning from Experience

A formal account of how an agent revises its beliefs and actions over time, with feedback. At a moment when intelligence was thought to require pre-specified rules, Blackwell showed otherwise.

03

Sufficiency & Information

The Rao–Blackwell theorem and Blackwell's comparison of experiments — foundations for getting the most information out of every observation, central to modern statistics and ML.

> *Learning happens over time — through decisions, feedback, and revision as conditions change.*

At a time when many believed intelligence required programming every possible outcome in advance, Blackwell showed — mathematically — that machines could learn from experience.

IN THEIR WORDS

Peers Who Knew Him

I consider Dr. Blackwell an absolutely first-rate research mathematician… his equals can be found only in the first category.

John von Neumann

Mathematician, foundational figure of modern computing

David was a great amongst greats. He was the great, great, great mathematician among great mathematicians.

Persi Diaconis

Professor of Mathematics & Statistics, Stanford

David predicted AI.

Stephen Stigler

Professor of Statistics, University of Chicago

A Modern Tribute

AI HARDWARE · 2024–2026

The Blackwell Architecture

NVIDIA's flagship AI accelerator generation — the chip powering today's largest models — is named after David Blackwell. A material acknowledgment, decades on, that his mathematics was already there in the silicon.

THE QUIET LEGACY

Wherever decisions are made under uncertainty

His ideas still run quietly beneath modern economics, computing, and artificial intelligence — shaping the future long before it had a name.

THE DOCUMENTARY

Game of Genius

A film about the man, the math, and our future — guided by his granddaughter Lisa.

FILM HOMEPAGE

Game of Genius

gameofgeniusfilm.com

Trailer, screenings, and the story behind the film.

INTERVIEW · JAN 2026

Earn Your Leisure

with granddaughter Lisa Blackwell

Brief biographical segment from 2:10 to 10:20 of the episode.

SHORT FILM · 3 MIN

Unsung Genius

Dr. David Blackwell — The Father of Modern AI

A condensed primer on Blackwell's life and contributions.