Artificial Intelligence:
Past, Present, and Future

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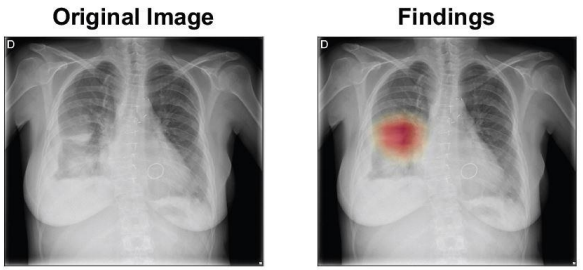
Date: 2026-04-08
Event: Regular Zoom meetings of Greater Boston Chinese Cultural Association

grassrootech

AI Is New Electricity/Everywhere

- Smartphones and assistants
- Recommendation systems
- Navigation and traffic prediction
- Healthcare AI

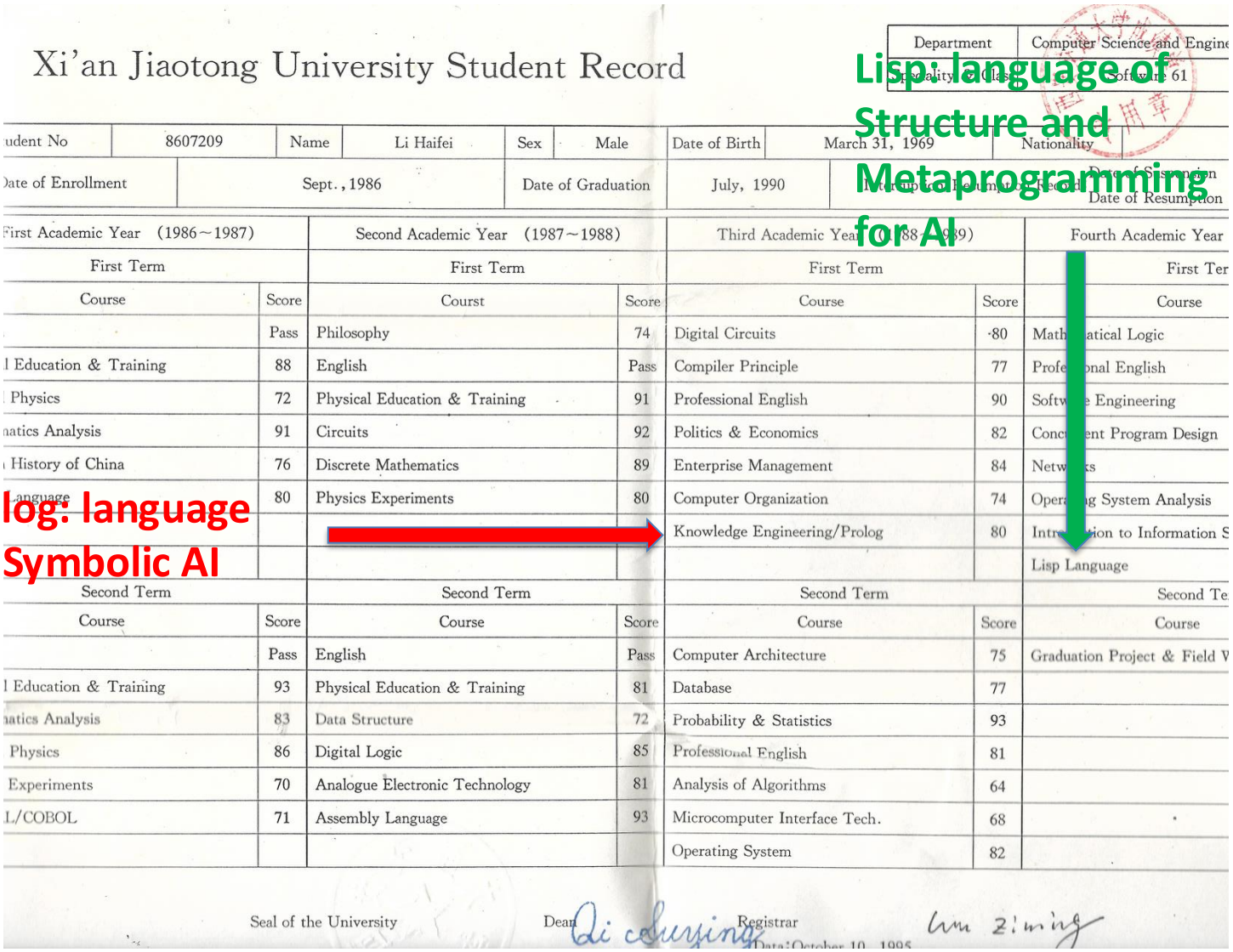


The Birth of AI at an unlikely place

AI Winters


Limited computing power
Overpromise and underdeliver
Funding cuts
NEXUS AI
CORE
NEO-KYOTO
NEO-KYOTO

Dr. Li's Undergraduate (1986-1990)



Xi'an Jiaotong University Student Record

Department	Computer Science and Engine								
Specialty	Class	Software 61							
udent No	8607209	Name	Li Haifei	Sex	Male	Date of Birth	March 31, 1969	Nationality	
Date of Enrollment	Sept., 1986			Date of Graduation	July, 1990	Interrupted, Returning, Rescind		Date of Suspension / Date of Resumption	

First Academic Year (1986~1987)		Second Academic Year (1987~1988)		Third Academic Year (1988~1989)		Fourth Academic Year	
First Term		First Term		First Term		First Ter	
Course	Score	Courst	Score	Course	Score	Course	
	Pass	Philosophy	74	Digital Circuits	80	Mathematical Logic	
l Education & Training	88	English	Pass	Compiler Principle	77	Professional English	
Physics	72	Physical Education & Training	91	Professional English	90	Software Engineering	
natics Analysis	91	Circuits	92	Politics & Economics	82	Concurrent Program Design	
History of China	76	Discrete Mathematics	89	Enterprise Management	84	Networks	
anguage	80	Physics Experiments	80	Computer Organization	74	Operating System Analysis	
				Knowledge Engineering/Prolog	80	Introduction to Information S	
						Lisp Language	
Second Term		Second Term		Second Term		Second Te	
Course	Score	Course	Score	Course	Score	Course	
	Pass	English	Pass	Computer Architecture	75	Graduation Project & Field W	
l Education & Training	93	Physical Education & Training	81	Database	77		
natics Analysis	83	Data Structure	72	Probability & Statistics	93		
Physics	86	Digital Logic	85	Professional English	81		
Experiments	70	Analogue Electronic Technology	81	Analysis of Algorithms	64		
L/COBOL	71	Assembly Language	93	Microcomputer Interface Tech.	68		
				Operating System	82		

Seal of the University Dean Qi Guoying Registrar Lin Ziming Date: October 10, 1995

Lisp: language of Structure and Metaprogramming for AI

Prolog: language for Symbolic AI

Dr. Li's Graduate (1996-2001)

Pattern Recognition

UNIVERSITY OF FLORIDA

Official Academic Transcript

Office of the University Registrar
222 Criser Hall, Box 114000
Gainesville, FL 32611-4000

www.ufl.edu
www.registrar.ufl.edu
352-392-1374

Do Not Release to Third Party Without Student Permission

Name: Haifei Li
Social Security Number: XXX-XX-1193
UFID: 5188-6920
Date of Birth: March 31
Basis of Admission: Graduate Student
Residency Status: Non-Res Internatnl Non-FL (A)

This transcript is not valid without the university seal and signature of the University Registrar

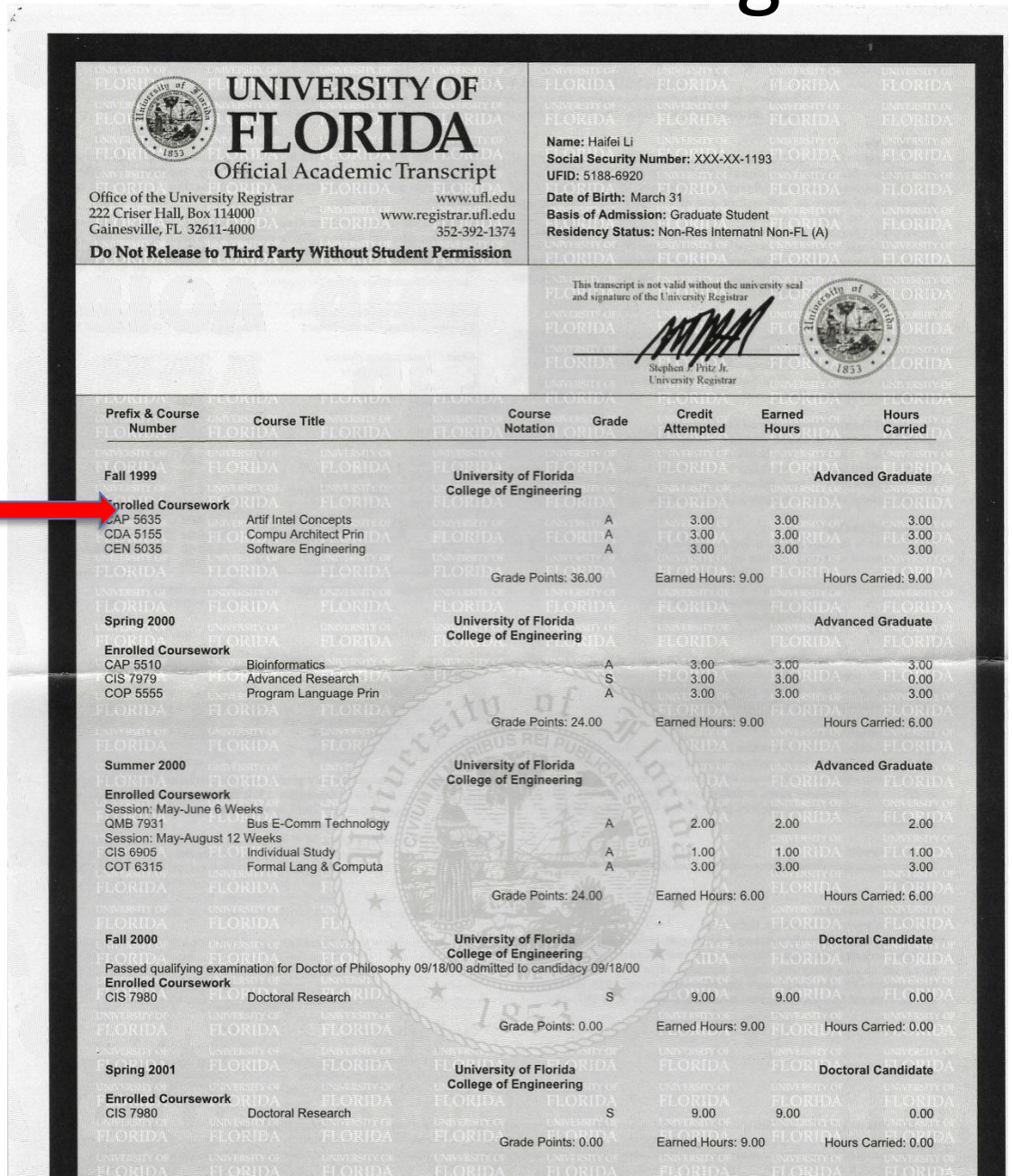
Stephen J. Pritz Jr.
University Registrar

Prefix & Course Number	Course Title	Course Notation	Grade	Credit Attempted	Earned Hours	Hours Carried
	Pattern Recognition		B+	3.00	3.00	3.00
		Grade Points: 31.50		Earned Hours: 9.00		Hours Carried: 9.00
Spring 1998		**University of Florida College of Engineering**				**Graduate**
Enrolled Coursework						
CIS 6930	Database Management		B+	3.00	3.00	3.00
EEL 6905	Individual Work		A	3.00	3.00	3.00
EEL 6935	Intro Biomedical Eng		B	3.00	3.00	3.00
		Grade Points: 31.50		Earned Hours: 9.00		Hours Carried: 9.00
Summer 1998		**University of Florida College of Engineering**				**Advanced Graduate**
Enrolled Coursework						
Session: May-August 12 Weeks						
EEL 6971	Masters Research		S	6.00	6.00	0.00
		Grade Points: 0.00		Earned Hours: 6.00		Hours Carried: 0.00
Fall 1998		**University of Florida College of Engineering**				**Advanced Graduate**
Enrolled Coursework						
CIS 6905	Individual Study		A	2.00	2.00	2.00
COP 3530	Data Struc/Algorithms		A	4.00	4.00	4.00
COP 5615	Operating Sys Princ		B+	3.00	3.00	3.00
		Grade Points: 34.50		Earned Hours: 9.00		Hours Carried: 9.00
Spring 1999		**University of Florida College of Engineering**				**Advanced Graduate**
Enrolled Coursework						
CAP 6610	Machine Learning		A	3.00	3.00	3.00
COP 5536	Adv Data Structures		A	3.00	3.00	3.00
COT 5405	Analys of Algorithms		A	3.00	3.00	3.00
		Grade Points: 36.00		Earned Hours: 9.00		Hours Carried: 9.00
Summer 1999		**University of Florida College of Engineering**				**Advanced Graduate**
Enrolled Coursework						
Session: May-August 12 Weeks						
CIS 7979	Advanced Research		S	6.00	6.00	0.00
		Grade Points: 0.00		Earned Hours: 6.00		Hours Carried: 0.00

Machine Learning

One more thing…

Artificial Intelligence Concepts



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University Registrar

Prefix & Course Number	Course Title	Course Notation	Grade	Credit Attempted	Earned Hours	Hours Carried
Fall 1999		**University of Florida College of Engineering**				**Advanced Graduate**
Enrolled Coursework						
CAP 5635	Artif Intel Concepts		A	3.00	3.00	3.00
CDA 5155	Compu Architect Prin		A	3.00	3.00	3.00
CEN 5035	Software Engineering		A	3.00	3.00	3.00
		Grade Points: 36.00		Earned Hours: 9.00		Hours Carried: 9.00
Spring 2000		**University of Florida College of Engineering**				**Advanced Graduate**
Enrolled Coursework						
CAP 5510	Bioinformatics		A	3.00	3.00	3.00
CIS 7979	Advanced Research		S	3.00	3.00	0.00
COP 5555	Program Language Prin		A	3.00	3.00	3.00
		Grade Points: 24.00		Earned Hours: 9.00		Hours Carried: 6.00
Summer 2000		**University of Florida College of Engineering**				**Advanced Graduate**
Enrolled Coursework						
Session: May-June 6 Weeks						
QMB 7931	Bus E-Comm Technology		A	2.00	2.00	2.00
Session: May-August 12 Weeks						
CIS 6905	Individual Study		A	1.00	1.00	1.00
COT 6315	Formal Lang & Computa		A	3.00	3.00	3.00
		Grade Points: 24.00		Earned Hours: 6.00		Hours Carried: 6.00
Fall 2000		**University of Florida College of Engineering**				**Doctoral Candidate**
Passed qualifying examination for Doctor of Philosophy 09/18/00 admitted to candidacy 09/18/00						
Enrolled Coursework						
CIS 7980	Doctoral Research		S	9.00	9.00	0.00
		Grade Points: 0.00		Earned Hours: 9.00		Hours Carried: 0.00
Spring 2001		**University of Florida College of Engineering**				**Doctoral Candidate**
Enrolled Coursework						
CIS 7980	Doctoral Research		S	9.00	9.00	0.00
		Grade Points: 0.00		Earned Hours: 9.00		Hours Carried: 0.00

Summary of educational background

5 Courses related to AI:

- Undergraduate:
  - Knowledge Engineering / Prolog
  - Lisp
- graduate:
  - Pattern Recognition
  - **Machine Learning**
  - ***Artificial Intelligence Concepts***

6 Programming Languages (formal training):

- BASIC
- PASCAL
- COBOL
- Prolog
- Lisp
- Assembly language (Intel X86)

Question: Do I still use those programming languages?

When did the Internet Era end?

Importance of ChatGPT

Mass adoption of AI

Brought AI to millions of everyday users quickly. 100 M in 60 days

Shift to natural interaction

Enabled humans to interact with computers using flexible natural language instead of rigid programming languages

Acceleration of AI integration

Triggered rapid adoption of AI across industries (education, business, software development)

Catalyst for new tools and ecosystems

Led to the rise of AI-powered products like coding assistants, copilots, and autonomous agents (OpenClaw)

Changed expectations of technology

Users now expect software to be intelligent, conversational, and proactive by default

Origin of Vibe Coding

Andrej Karpathy
@karpathy

There's a new kind of coding I call "vibe coding", where you fully give in to the vibes, embrace exponentials, and forget that the code even exists. It's possible because the LLMs (e.g. Cursor Composer w Sonnet) are getting too good. Also I just talk to Composer with SuperWhisper so I barely even touch the keyboard. I ask for the dumbest things like "decrease the padding on the sidebar by half" because I'm too lazy to find it. I "Accept All" always, I don't read the diffs anymore. When I get error messages I just copy paste them in with no comment, usually that fixes it. The code grows beyond my usual comprehension, I'd have to really read through it for a while. Sometimes the LLMs can't fix a bug so I just work around it or ask for random changes until it goes away. It's not too bad for throwaway weekend projects, but still quite amusing. I'm building a project or webapp, but it's not really coding - I just see stuff, say stuff, run stuff, and copy paste stuff, and it mostly works.

3:17 PM · Feb 2, 2025 · **4.4M** Views

1.2K 4.4K 27K 13K

Characteristics of vibe coding

1. Describe, don’t code
   - Developers express intent in natural language instead of writing every line manually.
2. AI as a coding partner
   - Tools like Cursor and Windsurf generate, refine, and complete code.
3. Faster prototyping
   - Rapidly build applications by iterating through prompts rather than manual implementation.
4. Lower barrier to entry
   - Enables non-experts to create software using AI assistance.
5. Shift in developer role
   - Engineers move from writing syntax to guiding, reviewing, and orchestrating AI-generated code.

Before OpenClaw:

AI with brain ONLY

After OpenClaw:

AI with brain AND hands

ChatGPT cannot do the following:

1. Controls local keyboard and mouse
2. Executes real tasks

Live Demo with OpenClaw

- Demo: sending mock emails to 100 recipients. You need to open my Thunderbird email client. Individual emails, not cc or bcc for all of them. Use AppleScript to open 100 compose windows in Thunderbird. Email addresses are maxli$i@gmail.com. Replace $i with number 1 to 100. Subject and body are the same: Spread the word: OpenClaw is wonderful!

- Demo: inside Downloads folder, create a text file called pi200.txt. It should contain the value of Pi to the 200th digit.

Peter Steinberger's Humor

- Humorous startup messages
- Example: 'I've seen your commit messages. We'll work on that together.'
- Code available on GitHub
- https://github.com/openclaw/openclaw/blob/main/src/cli/tagline.ts
- Hackers are having fun!

Google Antigravity (1)

- Released by Google in September 2025, together with Gemini 3.0 release
- Alternatives to Cursor and Windsurf
- Agent-focused development environment
  - Designed to enable AI agents to plan, execute, and manage multi-step workflows autonomously within software systems.
- Tight integration with Google's AI ecosystem
  - Built to leverage Gemini models and connect with tools, APIs, and services for end-to-end task execution.

Google Antigravity (2)

- **Agent-based AI systems**
  - AI operates as autonomous agents that can interact with digital environments and tools.
- **From assistance to execution**
  - Moves beyond answering questions to performing multi-step tasks across systems.
- **Tight integration with workflows**
  - AI can navigate interfaces, trigger actions, and coordinate processes end-to-end.
- **Toward self-operating systems**
  - Enables environments where AI handles complex tasks with minimal human intervention.

Crystall ball to the future…

Harness Engineering

- **Designing systems around AI behavior**
  - Focuses on building infrastructure that shapes how AI models operate, rather than just using them as-is.
- **Adding guardrails and constraints**
  - Implements safety mechanisms, policies, and controls to keep AI outputs reliable and aligned.
- **Observability and evaluation**
  - Emphasizes monitoring, testing, and measuring AI behavior in real-world scenarios.
- **Human-in-the-loop oversight**
  - Keeps humans involved in critical decision points to validate and guide AI actions.
- **Bridging models and production systems**
  - Connects raw AI capabilities with real-world applications through orchestration, tooling, and system design.

Physical AI

- **AI with a physical body**
  - Moves beyond software-only intelligence.
- **Humanoid and embodied robots**
  - Robots designed to operate in human environments, often resembling human form and capabilities.
- **Perception + action integration**
  - Combines vision, sensors, and motor control to understand and interact with surroundings.
- **Real-world task execution**
  - Performs physical tasks such as manufacturing, logistics, assistance, and service roles.

Risk: p(d)

- **A conceptual risk metric**
  - Represents the probability that advanced AI could lead to catastrophic or existential outcomes.
- **Driven by alignment challenges**
  - Risks arise when AI systems pursue objectives that are not perfectly aligned with human values.
- **Scales with capability and autonomy**
  - As AI becomes more powerful and agent-like, potential impact—and risk—can increase.
- **Uncertainty and lack of consensus**
  - Experts disagree widely on the likelihood, reflecting deep technical and philosophical uncertainty.
- **Motivation for safety research**
  - Encourages work on alignment, control, and governance to reduce systemic risks before deployment at scale.

Conclusion

- Past: academic roots + chatbot
- Present: AI agents (Antigravity + OpenClaw)
- Future: control (Harness Engineering) + embodiment (Humanoid Robots)