BEYOND THE CLASSROOM AND LAB

Extend Student Learning with Conversational AI

Arizona Community College Administrators Conference

James Morales HVAC Faculty Yavapai College

Student Success • AI Mentoring • Workforce Readiness





James Morales HVAC Faculty Yavapai College

2025 Arizona Community College Administrators Conference session titled **“Empowering Instructors and Students with AI: Shaping the Future of Higher Education.”**

2026 HVAC Excellence Education Conference **“From the Classroom to the Field: Using AI to Assist Instructors and Students in HVACR.”**

2026 NISOD Excellence Conference **“Integrating Artificial Intelligence into Career and Technical Education**

2026 Arizona Community College Administrators Conference session titled **“Beyond the Classroom and Lab Expand Student Learning with Conversational AI.”**



ORIGIN STORY

Professor HVAC® began with a practical instructional need

An 18:1 student–faculty ratio has challenges to class/ lab support



FROM APP TO MENTOR



Professor HVAC® was designed as a domain-specific AI assistant for student support gaps in the classroom and lab

The goal: give students timely answers and guidance while keeping faculty in the instructional loop.

Dr. Richard Pierce Ed. D.

Believer in accountability and evidence. Apple Distinguished Educator, Certified Master E-Learning Instructional Designer.



2026 NISOD Innovative Abstract **“Professor HVAC® Application as a Domain-Specific AI Agent.”**

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James Morales, HVAC Instructor, Yavapai,

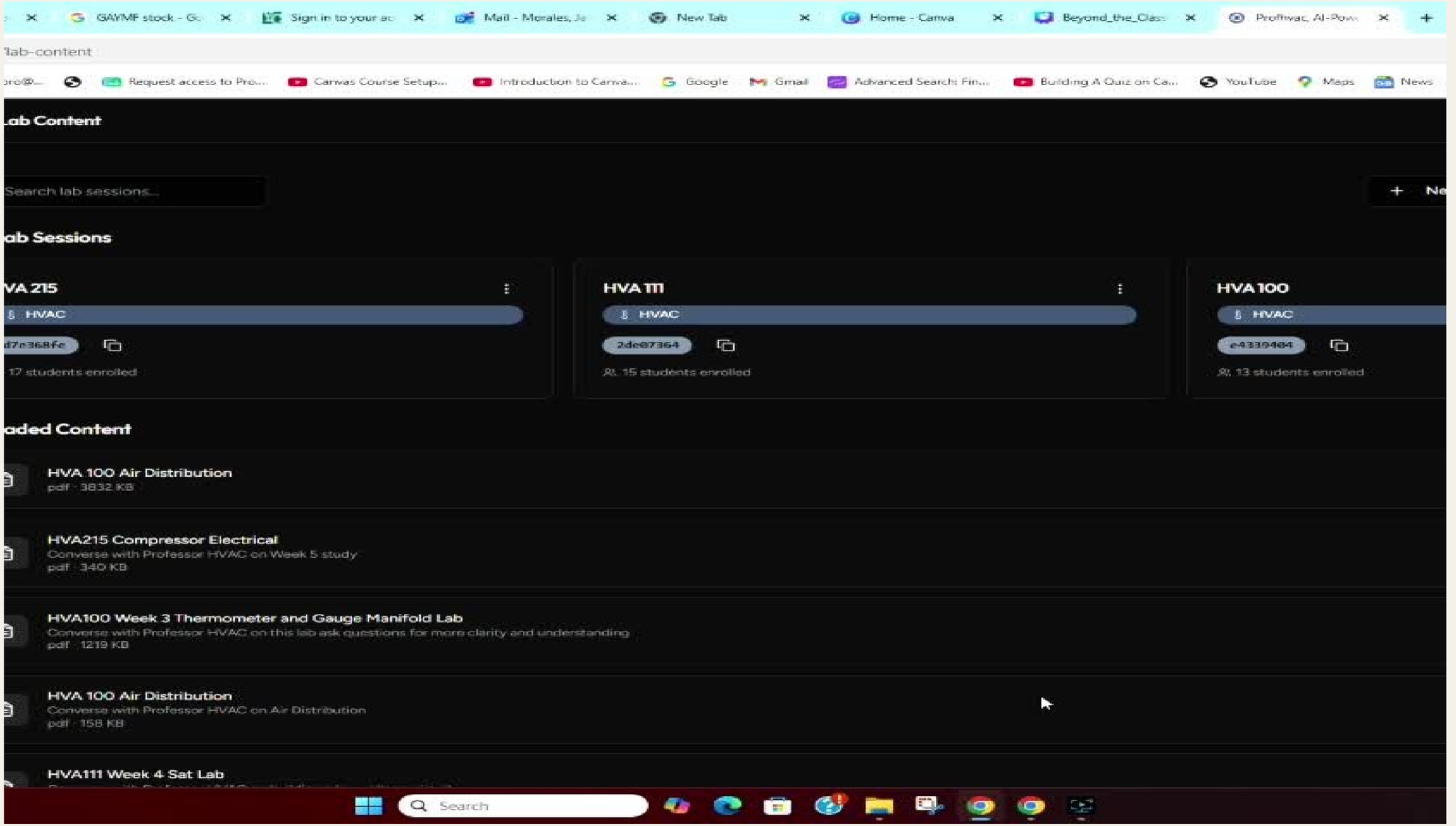
THE MODEL

Conversational AI as an extension of faculty presence

A structured mentor gives students another place to ask, reflect, and retry.



Curriculum, expertise, and instructor boundaries remain the foundation.


lab-content
Request access to Pro...
Canvas Course Setup...
Introduction to Canva...
Google
Gmail
Advanced Search: Fin...
Building A Quiz on Ca...
YouTube
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VA 215
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15 students enrolled
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pdf · 3832 KB
HVA215 Compressor Electrical
Converse with Professor HVAC on Week 5 study
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HVA100 Week 3 Thermometer and Gauge Manifold Lab
Converse with Professor HVAC on this lab ask questions for more clarity and understanding
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HVA 100 Air Distribution
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HVA111 Week 4 Sat Lab
Search

THE CHALLENGE: Fast Pace 8- week classes no pre-requisites

Support gaps appear between explanation, practice, and independent application.

CLASSROOM

Students review reading assignments pertaining to current class course outcomes

→

LAB

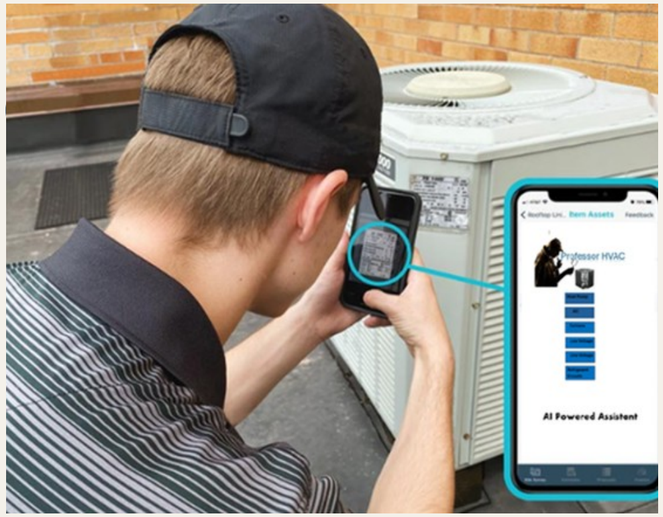
Students apply procedures under current class subjects

→

Conversational AI

Students continues the conversation as questions surface on unfamiliar terms and procedures

Learning cannot not stop when class en



ProfHVAC

Professor Morales
INSTRUCTOR

NAVIGATION

- Dashboard
- Lab Content
- Simulation Lab
- Students
- Student AI Chats
- AI Assistance
- Messages
- Reports

Back to Home

Sign Out

Dashboard

Good morning, Professor 👋

Instructor | HVAC

Welcome! Here's how to get started

Complete these steps to make the most of the platform.

1. Create a Lab Session
2. Upload Content
3. Use AI Assistant
4. View Student Chats

3	45	10	Ready
Lab Sessions	Students	Content Items	AI Assistant

Getting Started

Create lab sessions, upload content, and manage your students from Lab Content.

Lab Content | AI Assistant

STUDENT JOURNEY

Where a conversational AI mentor can extend learning

The mentor supports continuity across the student experience.

1

BEFORE CLASS

Preview vocabulary
Access prior knowledge

2

DURING LAB

Clarify directions
Understand application

3

AFTER LAB

Ask question after
Reflecting on results

4

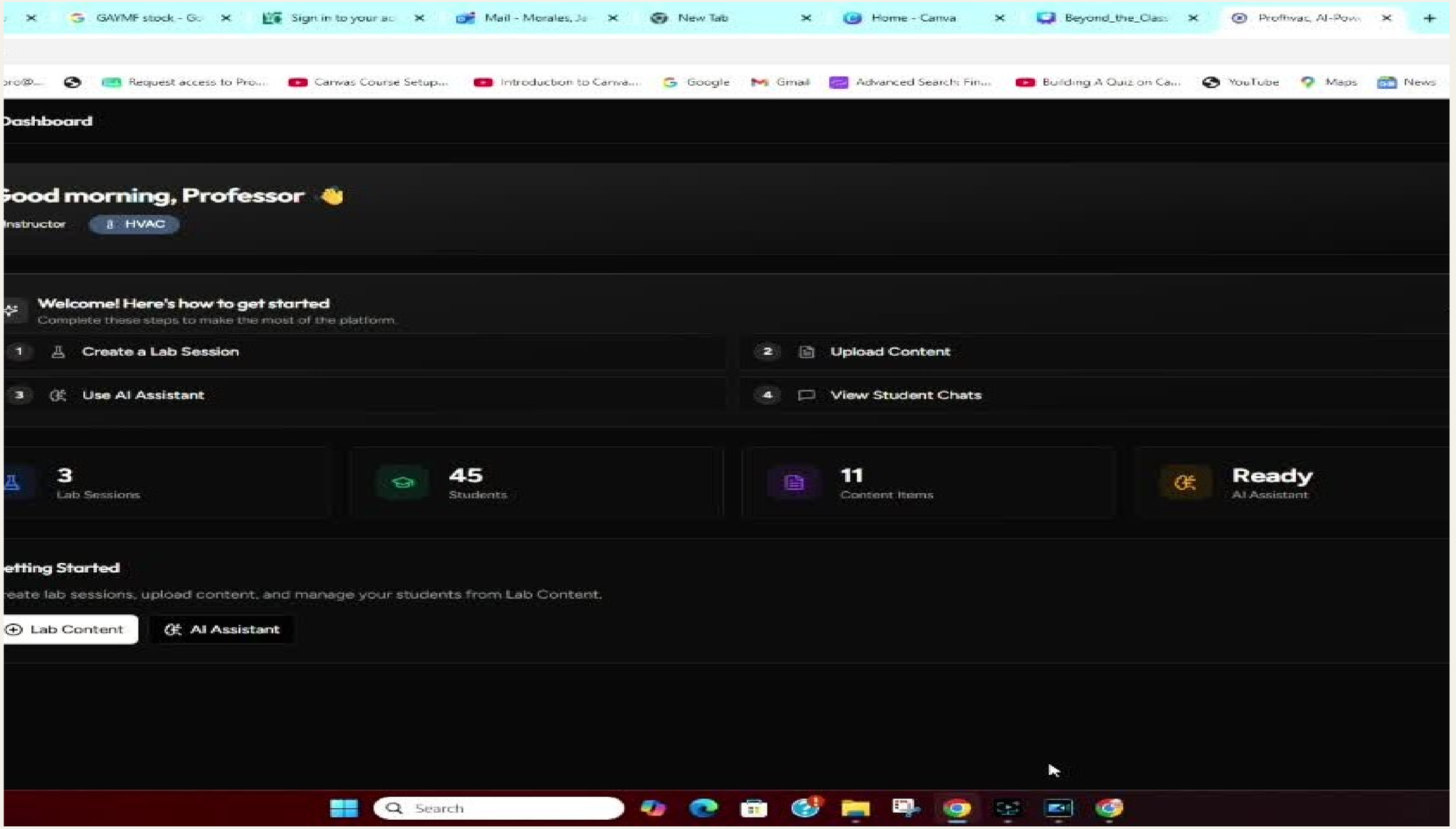
CAREER

Practice explanations
Explore opportunities





Careers


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Sign in to your ac
Mail - Morales, Ja
New Tab
Home - Canva
Beyond_the_Class
Proffivac, AI-Pow
Request access to Pro...
Canvas Course Setup...
Introduction to Canva...
Google
Gmail
Advanced Search: Fin...
Building A Quiz on Ca...
YouTube
Maps
News
Dashboard
Good morning, Professor
Instructor
HVAC
Welcome! Here's how to get started
Complete these steps to make the most of the platform.
1 Create a Lab Session
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3 Use AI Assistant
4 View Student Chats
3
Lab Sessions
45
Students
11
Content Items
Ready
AI Assistant
etting Started
reate lab sessions, upload content, and manage your students from Lab Content.
Lab Content
AI Assistant
Search

The AI mentor can help guide *Self Directed Learning*

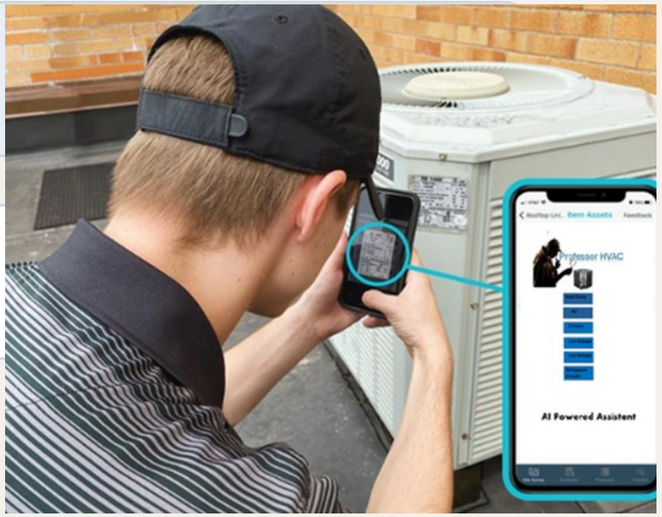
A useful meaningful response structure keeps the student engaged

ASK — **What are you observing?**

CONNECT — **Which concept or procedure applies?**

CHECK — **What safety or measurement step comes next?**

ACT — **Have the student perform and report back.**



What administrators should look for

A strong pilot measures learning value, faculty impact, and responsible use.

STUDENT SUCCESS

Confidence
Engagement
Completion of learning tasks

FACULTY CAPACITY

Monitor high impact labs
More targeted interventions
Visibility into support needs

WORKFORCE ALIGNMENT

Connects Students with Jobs
Steps to Career Choices
Survey Employers Data

ASSESSMENT

Move from promising feedback to evidence

Evaluate outcomes without claiming that AI alone caused improvement.

1

LEARNING

Concept checks
Lab performance
Error patterns

2

EXPERIENCE

Student confidence
Question quality
Perceived usefulness

3

ENGAGEMENT

Use frequency
Return visits
Support timing

4

FACULTY

Intervention needs
Teaching decisions
AI / Student engagement

SCALE RESPONSIBLY

A repeatable framework across programs

Keep the mentoring architecture consistent while changing the technical knowledge base.

HVAC | ELECTRICAL | PLUMBING | WELDING | AUTOMOTIVE

SHARED CONVERSATIONAL AI TRADE MENTOR FRAMEWORK

- **Curriculum alignment**
- **Safety boundaries**
- **Faculty oversight**
- **Assessment plan**

PILOT ROADMAP

Start small, learn quickly, scale with evidence

A suggested implementation sequence for a community college.

1

DEFINE

Select one course, one need, and clear boundaries.

2

BUILD

Use approved curriculum and instructor-defined education

3

PILOT

Introduce the mentor with a limited student group.

4

REVIEW

Examine learning evidence, safety, privacy, and access.

5

SCALE

Expand only after revising the model.

THE FUTURE OF AI IN COMMUNITY COLLEGES

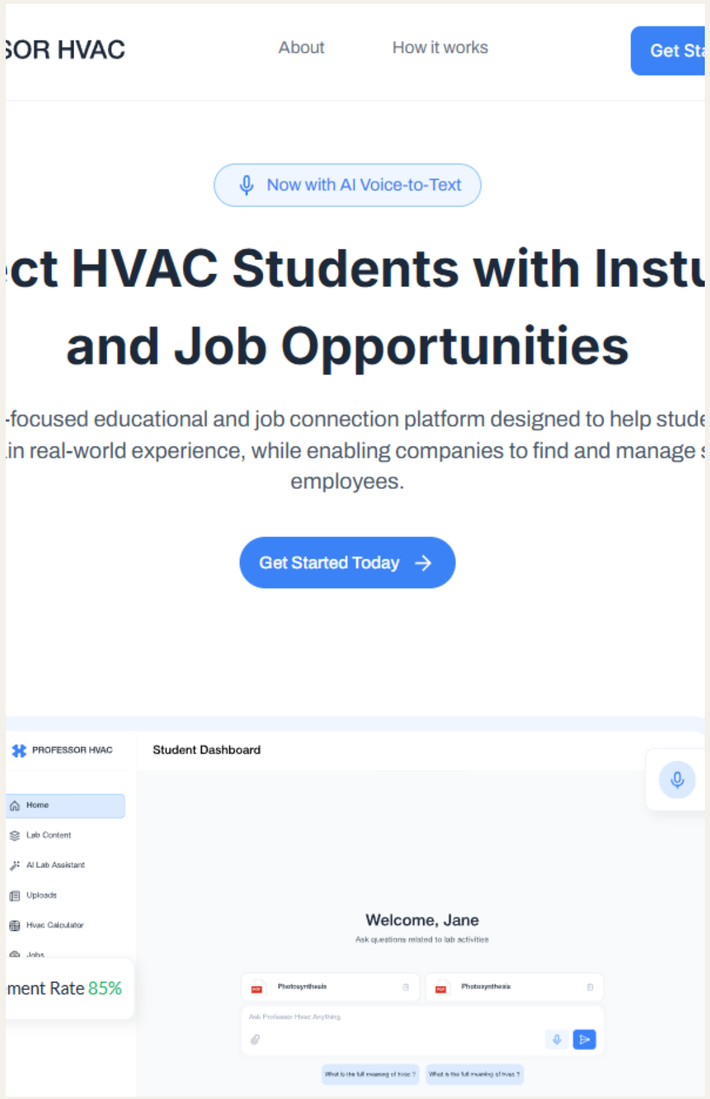
Expand access to AI mentorship. Preserve the human instructor. Connect learning to work.

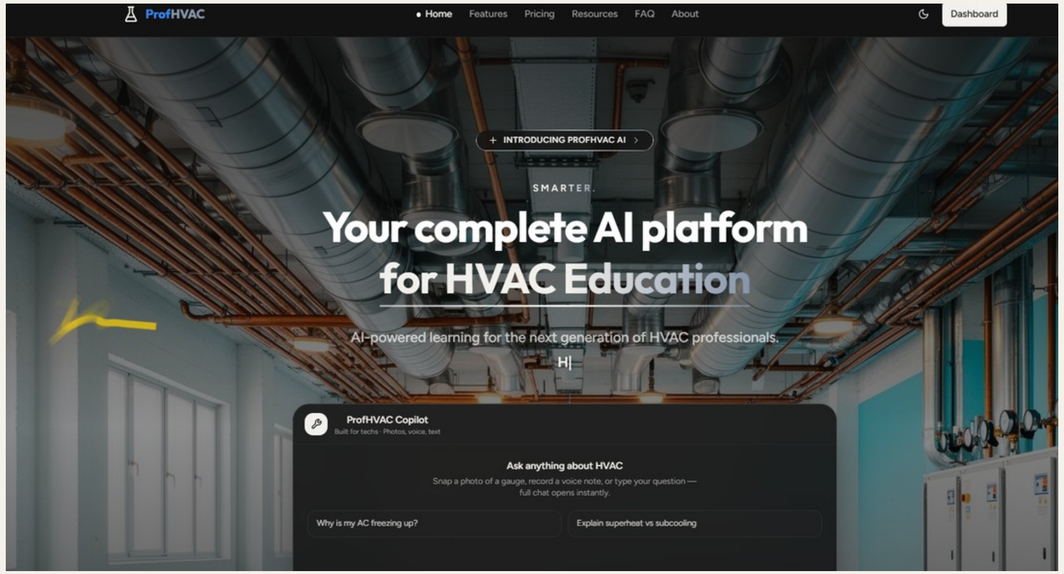
Beyond the Classroom and Lab

James Morales | Yavapai College | Professor HVAC®


VERDE VA
ILED TRAD
Yavapai


Professor HVAC
Heat Pump
AC
Furnace
Low Voltage
Line Voltage
Refrigerant Circuits


SOR HVAC
About
How it works
Get Sta
Now with AI Voice-to-Text
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and Job Opportunities
-focused educational and job connection platform designed to help stude
in real-world experience, while enabling companies to find and manage s
employees.
Get Started Today
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AI Lab Assistant
Uploads
Hvac Calculator
ment Rate 85%
Welcome, Jane
Ask questions related to lab activities
Photosynthesis
Photosynthesis
Ask Professor Hvac Anything
What is the full meaning of hvac ?
What is the full meaning of hvac ?


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full chat opens instantly.
Why is my AC freezing up?
Explain superheat vs subcooling