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The Tool Box

Serving the Electrical, HVAC & Plumbing Industries Since 1912

What's inside...

Navigating the AI Landscape	1-3
Mechanical Member	4
Associate Member	4
Members' Birthdays	5
Members' Anniversaries	5
Inspirational Quote	5
Condolences	5
Toolbox Talk	6
Welcome New Member	6
Happy New Year Puzzle	7
Area Meeting Snapshots	8-9
Insurance Information	10
Mark Your Calendars	11
Vision/Mission Statement	12

Navigating the AI Landscape

One cannot avoid the presence of artificial intelligence (AI) in a world that is rapidly becoming more digitized. AI is a pervasive force transforming almost every sector of the economy, from intelligent assistants that help us organize our lives to recommendation engines that can anticipate our inclinations. Yet, for the average person, our conversations about AI and its applications would not have crossed our lips less than a year ago. Much like the idea that "butt dial" is now a common phrase known by almost everyone, ChatGPT is talked about in virtually every business setting I'm a part of.

So, there's this crazy buzz about the digital world changing everything we know. It feels like when Netscape popped up in '93 or '94, and suddenly, everyone could jump on the internet super-highway. That was a game-changer, right? But even then, people were talking - asking what it meant for us all to have that much info at our fingertips. Today's tech revolution has got us chatting again because with all these advancements come serious ethical questions we can't ignore.

Ethical challenges posed by AI aren't just some futuristic, theoretical dilemmas. They're real issues that demand our attention now. But let's remember: ethics isn't a simple case of black and white. You can't whip up an ethical solution to fit your own moral compass, especially with something as dynamic as AI machine learning. This tech field moves so quickly; the moment we think we've cracked the ethical code for our AI, it has already evolved. Just like Maslow's hierarchy stresses fulfilling basic needs before moving on to complex ones, we must address fundamental ethical questions around AI first – and urgently so! We cannot wait until love is in question when food hasn't been sorted yet.

The Urgent Need for Ethical Artificial Intelligence

It is not merely an intellectual exercise but rather a societal obligation to discuss the ethical implications of artificial intelligence. As AI systems take on an increasingly significant part in the decision-making process, ranging from medical diagnosis to criminal sentencing, the moral standing of these systems becomes just as important as their computational capabilities. Failures in ethics in artificial intelligence systems could result in various unfavorable outcomes, including discriminatory practices, invasions of personal privacy, and even the risk to human lives.

Think about self-driving cars for a second. They're high-tech, and they could totally change the way we travel by making roads safer and traffic flow smoother. But there's a big ethical question that comes with them. Imagine if one of these vehicles got into an accident it couldn't avoid – who should it protect? The people inside the car or those walking on the street? It's not just some deep thought experiment, but real-life issues that need solutions now.

Back in 2018, we witnessed a devastating event that shook our trust in autonomous vehicles. An Uber self-driving car hit and killed an innocent pedestrian in Arizona. Why? The AI behind the wheel wasn't prepped enough to deal with unexpected situations like someone darting across the street out of nowhere. This heart-wrenching incident was a wake-up call, showing us how critical it is not to brush off ethical considerations when dealing with AI systems. If ethics aren't baked into these technologies, things can go horribly wrong - as they did here.



Here's the deal, folks. It's not just about how smart our AI gets; it's also about making sure it plays nice! We've got to remember that if we don't address these ethical issues head-on, things can get ugly real quick. I'm talking about unfair treatment and privacy invasions... heck, even human lives could be at stake, as we've sadly seen before.

Bias is the enemy that cannot be seen.

Bias can be a sneaky beast, hiding in the underbelly of AI systems and impacting various parts of our lives. So, let's zoom into this problem using healthcare as an example to show how bias can quietly slip in and drive inequalities. It's like Maslow's hierarchy: we must fix these fundamental issues before moving on to bigger things. You know, you wouldn't worry about love if you're hungry. In the same way, we shouldn't overlook biases while building advanced AI solutions.

Picture this: a groundbreaking AI tech helping doctors spot and support patients with complicated health issues. Sounds amazing, right? It could change the game for healthcare everywhere! But here's the kicker - it might have a sneaky problem of bias hiding under its cool, unbiased front.

In 2019, a startling revelation emerged from the realm of healthcare AI. A comprehensive study uncovered a disconcerting truth—this AI system exhibited a troubling bias. It was less likely to flag individuals of color for specialized care than their white counterparts. Importantly, this bias did not result from malevolent intentions programmed into the system. Instead, it manifested the insidious influence of biased training data.

So, get this: the AI system was taught using data that mirrors a huge fairness issue in healthcare cash flow. It thinks spending equals health needs, but it's not that simple. Black patients often need as much care as white ones, but historically, they don't get an equal slice of the funding pie or attention. This gap is deep-seated and comes from biases we've seen for generations now. So, when we talk about real-world situations, equality is just not there yet.

It's like this. This biased training data led to some heavy fallout. Imagine an AI system created to amp up patient care, unknowingly playing a part in deepening societal biases already there. Instead of leveling the healthcare field, it threw more weight behind these disparities - making racial inequalities in medical treatment even worse.

It's wild how sneaky bias can be in AI, right? It lurks behind the scenes and often slips under the radar. But when it hits, its effects are massive and far from being just technical glitches. They actually seep into ethical issues and social obligations we all face.

Bias is like a hidden enemy, quietly nestled within our world's shaping algorithms. It isn't just some technical hiccup we must fix - it's an ethical issue demanding immediate attention. We all have to jump on board and work together to root out these biases. Consider Maslow's hierarchy; we can't progress without addressing fundamental issues first. This isn't about simply tweaking code but also reshaping societal norms because our digital tools reflect who we are as humans.

The Problem with the "Black Box"

As technology advances and AI systems become more intricate, a pressing issue emerges - the "black box" problem. This phenomenon, which refers to the growing complexity of AI systems and the resulting opacity in their decision-making processes, has far-reaching implications, especially in the context of accountability. By examining real-world examples, let's delve deeper into this problem and understand how it relates to AI.

Finance is one of the most significant areas where the "black box" problem is a cause for concern. Artificial intelligence algorithms are increasingly employed to make complex trading decisions in the stock market, currency exchange, and other financial sectors. These algorithms process vast amounts of data, factor in numerous variables, and execute trades in fractions of a second. While this can lead to efficient and profitable trading, it also introduces a significant challenge regarding accountability.

Consider a scenario where an AI-driven trading algorithm unexpectedly makes a detrimental decision that adversely impacts the stability of the financial market. Such decisions can result in severe economic losses for individuals, companies, and economies. The problem lies in understanding why the AI system made that specific decision. Was it based on an unforeseen anomaly in the data? Did the algorithm react to global events in an unexpected way? Without a transparent and comprehensible explanation, pinpointing accountability becomes nearly impossible.

This lack of transparency poses several problems:

1. **Regulatory Challenges:** Regulatory bodies struggle to oversee and enforce rules when they cannot fully understand how AI systems arrive at their decisions. It is challenging to ensure that AI-powered financial activities comply with existing regulations.

2. **Risk Management:** Financial institutions face increased risk due to AI decision-making uncertainty. It's challenging to manage and mitigate risks effectively when the inner workings of these algorithms are obscure.

3. **Investor Confidence:** Investors may lose confidence in financial markets if they believe that AI-driven systems are making unpredictable and unexplainable decisions. This can lead to market volatility and reduced investment.

So, AI's whole "black box" issue is a real head-scratcher, right? That's where explainable artificial intelligence, or XAI, comes into play. Think of it like this: we're taking these crazy complex AI systems and ensuring they're built with an open-book policy. So, instead of their decisions being hidden away in some cryptic code, they're laid out clear as day for us humans to understand. Cool stuff!

The Conundrum of Privacy

The insatiable appetite for data that AI has given rise to serious concerns about users' right to privacy. For instance, smart speakers are becoming increasingly commonplace in many different types of homes. These devices can record and store private conversations and always listen to whatever is happening around them. Even though businesses claim that robust security measures are in place, there is still a risk that the information could be misused or hacked, which raises ethical concerns that are difficult to dismiss. The question "At what cost does convenience come?" is an important one to ask.

Imagine Sarah, a diligent professional who values both convenience and privacy. Like many others, she has a smart speaker nestled on her kitchen countertop. It's an AI-powered marvel that simplifies her daily routine, from checking the weather forecast to queuing up her favorite tunes. Little does she know, her smart speaker is more than just a personal assistant—it's a silent observer, always looking for voice commands.

One evening, Sarah hosts a dinner party with close friends. They engage in lively, private conversations about personal experiences, shared memories, and plans for the future. Unbeknownst to them, the smart speaker silently records every word, storing these intimate moments on a remote server. While businesses that manufacture these devices claim to have robust security measures, the risk of this precious information being misused or hacked remains a haunting specter in the background.

So, we're wrestling with a tricky question here: "What's the real price of convenience?" Gadgets powered by AI bring incredible ease to our lives. But at the same time, they tiptoe around our personal privacy boundaries. The charm of having voice-activated help demands us to share our most private moments in the digital world. This makes us wonder if this comfort level is worth risking our privacy for. Like Maslow's hierarchy of needs puts basic survival above all else, it may be time we prioritized safety over convenience.

The Unknown Terrain That Will Be the Future Landscape

As we move into a future powered by AI, the number of ethical concerns that arise will only grow. The stakes are getting higher and higher. It is no longer a question of "if" autonomous vehicles will be created but rather "when," and when they do, they will be required to make split-second decisions that could mean the difference between life and death. Artificial intelligence tools are increasingly used in the judicial system to predict criminal behavior. This is a field that is fraught with ethical minefields.

AI isn't just shaking up the car industry; it's stepping into our courts too. More and more, AI tools are being used to guess future crimes - a huge help for judges and cops when they've got tough calls to make. But this isn't some crime-fighting utopia - it's a moral minefield we're wading through. Even in justice, small businesses need clever tactics rather than big bucks like their heavyweight counterparts.

Reflect on this - an AI bot incorrectly labels someone as a serious offender, sparking unjust legal repercussions. The ripple effects aren't limited to the wrongly accused but seep into society's fabric. Tackling ethical dilemmas here is paramount - we need transparency in our algorithms and must address bias and privacy concerns head-on. This isn't simple; it's critical! Like Maslow puts food before love, let's put fairness first when developing AI tech. Our societal structure demands it.

The Practice of Inclusivity in Dialogue

Imagine a world where the decisions and developments in AI are shaped by a broad spectrum of voices, where the ethical dimensions of AI are discussed openly and inclusively. This vision of a more democratic approach to AI ethics is desirable and imperative. After all, the impact of AI is far-reaching, affecting everything from our daily lives to the future of society as a whole. Everyone must have a say in shaping the future of AI in a way that aligns with our shared values and principles.

So, what we gotta do is stir up a lot of chat about this whole AI ethics thing. We can't just let the big shots and brainiacs have all the say - we need to bring everyone into it from every walk of life. Think local meetups at your neighborhood community center or online forums that anyone can join in on. It's important because these conversations affect us all - so everyone should get their two cents in.

So, inclusivity in conversation is key because it gives us a chance to share loads of ideas and views about AI ethics. This way, we can spot any potential biases and decide together on what steps to take next. By having these chats, we're able to steer the direction of AI development with an emphasis on promoting human welfare, fairness, and responsibility. That's all really important stuff!

A Legal and Ethical Obligation

More than just technological progress is needed to combat AI's double-edged sword, which not only promises unmatched levels of innovation but also opens a Pandora's box of ethical conundrums. It requires having the moral fortitude to do the right thing, being willing to wrestle with complex problems, and having an unwavering commitment to upholding ethical standards. As artificial intelligence continues to reshape the landscape of human life, we are responsible for engaging, questioning, and directing how we allow these technologies to shape our collective future.

The real question is, how do we envision AI shaping our world? Are we ready to grapple with the tough moral choices that accompany AI's potential? The course of tech and its bond with humanity—for better or worse—will hinge on these answers. Just like food in Maslow's hierarchy, fundamental ethical guidelines are essential before progressing. After all, a sense of belonging doesn't cut it if you're not safe and fed first.



Mechanical Member



In early 1985, Control Management, Inc. (CMI) was founded by Phil Wilson and Kent Walters. Established as an HVAC controls vendor, CMI provided and installed pneumatic, electronic, and direct digital control systems. In 1986, Siemens approached CMI to become its sole source supplier of building automation and control systems for the state of South Carolina. CMI gratefully accepted the offer and officially emerged as one of six Siemens Independent Field Offices (IFO) in the United States. Since those early days, in addition to our corporate office in Columbia, CMI has opened offices in Charleston, Myrtle Beach, and Greenville. We are currently staffed with over 130 dedicated employees, as we continue to grow. CMI services now include building automation, energy monitoring, fire alarm, card access and security, and video surveillance. With this full suite of services, we offer the ability to have a single interface to all aspects of a buildings operations.

Sadly, in December, 2020, Phil Wilson unexpectedly passed away. His wife Beth, who has been an integral part of the business since its founding, chose to become Kent's partner in the business. Together, Beth and Kent continue to work towards providing our customers with an unparalleled finished product along with a personal relationship experience in service .

Associate Member



Charlotte Pipe and Foundry is the nation's leading manufacturer of cast iron and plastic pipe and fittings for plumbing applications. Founded in 1901 and privately held, the company has manufacturing plants across the United States. It's the only manufacturer that offers a complete system of cast iron, PVC, CPVC, ABS, Flow-Guard Gold®, ChemDrain® and Edge HP Iron® pipe and fittings for residential and commercial applications.

All Charlotte Pipe products are exclusively made in the USA and distributed worldwide. The company employs more than 1,700 loyal, hard-working associates and is guided by the philosophy of their founder - produce the best possible product and provide the best possible service for the customer. The company is able to accomplish this by combining modern technology with over a century of American craftsmanship and experience.

In fall 2023, Charlotte Pipe opened a \$460 million state-of-the-art foundry in Oakboro, North Carolina. The new foundry allows a more efficient layout of the company's plant and equipment and gives the flexibility to expand to meet future needs. This is one example of the company's commitment to investments that benefit their associates and customers.

Mission Statement: Integrity is our foundation, meeting the expectations of our customers, associates and owners is our commitment.

Happy Birthday Members!

Alice Gatch	1/3	Gatch Electrical Contractors, Inc.	Wife of Jimmy
Rudy Cullum	1/5	Cullum Services, Inc.	
Ute Holcombe	1/6	Summerville Mechanical, Inc.	Wife of Carlton
Sharon Bailey	1/13	C. R. Hipp Construction Co., Inc.	Wife of Pete
Manuel Hendrix	1/13	Honorary Life Member	
Shannon Wiggins	1/13	Carolina Insulation Contractors	
Paul Prevatte	1/17	Honorary Life Member	
Bob Jacques	1/21	Hajoca Corporation	
Terri Harley	1/23	Wife of Honorary life Member Randy	
Susie Heyward	1/25	W. B. Guimarin & Company, Inc.	Wife of Carroll, Sr.
Allison Knox	1/25	Johnson Controls	
Stacy Dawkins	1/26	Border States	Wife of Richard
Scott Arledge	1/28	Smith & Stevenson, Inc.	
Dan Brailsford	1/30	Honorary Life Member	
Bill Self	1/30	Honorary Life Member	

We would like to announce your Birthday too! If you would like to be listed, please call 803-772-7834.

Anniversaries

Mr. & Mrs. Mitch Knox	1/10	Johnson Controls	Allison
Mr. & Mrs. Frank Hill	1/14	Hill Plumbing & Air	Debbie
Mr. & Mrs. Henry Poplin	1/25	B & L Electric Company	Brenda

Inspirational Quote

**“Don't save your best
for when you think
the material calls for
it. Always bring your
full potential to every
take, and be on top of
your job, or they will
replace you.”**

GABRIELLE UNION.
WE'RE GOING TO NEED MORE WINE

Condolences

The Hubbard Family in the loss of
David Ray Hubbard
December 15, 2023

The Whitehurst Family in the loss of
Gloria Spires Cook (Tim's mother)
December 21, 2023

Family & Friends in the loss of
Jim Witt
December 25, 2023

“Tool Box Talks” – Safety Tips

FIRE PREVENTION—UNDERSTANDING CATEGORIES OF FLAMMABLE LIQUIDS

[Reference 1910.106 / 1926.152]

It is always a good idea to have a portable fire extinguisher nearby at work in case a small fire breaks out. However, we would all be better off if we could prevent the fire from starting in the first place! One of the keys to preventing fires when handling and storing flammable liquids is to understand the differences in the various categories of flammable liquids, as specified by OSHA.

In the updated OSHA regulations, flammable liquids are listed as either Category 1, 2, 3, or 4. Do you know the difference between these categories? It is important to understand the difference, because although all categories of flammable liquid can burn in the right circumstances, some are apt to ignite much easier than others and therefore require stricter precautions to be taken during their storage and use.

First of all, realize that is not actually liquid that burns, but rather vapors. And the temperature at which a particular liquid evaporates to generate enough vapors to form an ignitable mixture with air near the surface of the liquid is known as the liquid’s “Flash Point.” So the lower the flash point of a liquid is, the more apt it is to catch on fire, while the higher the flashpoint of a liquid, the harder it is to catch on fire. One other factor related to categorization of these liquids is their “Boiling Point,” as those with a lower boiling point vaporize at a lower temperature than those with a higher boiling point.

Now back to answering my original question. The difference between the four categories of flammable liquids is that those with the lowest flash points and boiling points are designated as Category 1 flammables and those with the progressively higher flash points are designated as Categories 2, 3, or 4. So, all other things being equal, a Category 1 flammable liquid would be much easier to ignite than a Category 4 liquid.

This difference in the hazards associated with the various categories of flammable liquids is evident when we look at the container labels and Safety Data Sheets for these liquids. Flammable liquids designated as categories 1 and 2 will display the signal word “Danger” on their labels, but Category 3 and 4 flammable liquids will display the signal word “Warning.” This is also why labels and SDS’s generally require us to take much more stringent precautions when handling or storing a Category 1 flammable liquid than when using a liquid from one of the higher categories.

So please pay close attention to the category of flammable liquids you are using at work (and home) and follow all precautionary statements for the safe storage and use of those products that are listed on their Safety Data Sheets and container labels. Doing so will help prevent fires, and injuries, from occurring due to mishandling or misuse.

****OSHA CATEGORIES OF FLAMMABLE LIQUIDS****

Flammable liquids are divided into four categories as follows:

Category 1 includes liquids having flash points below 73.4 °F and having a boiling point at or below 95 °F.

Category 2 includes liquids having flash points below 73.4 °F and having a boiling point above 95 °F.

Category 3 includes liquids having flash points at or above 73.4 °F and at or below 140 °F (60 °C). When a Category 3 liquid with a flash point at or above 100 °F is heated for use to within 30 °F of its flash point, it shall be handled in accordance with the requirements for a Category 3 liquid with a flash point below 100 °F.

Category 4 includes liquids having flash points above 140 °F and at or below 199.4 °F. When a Category 4 flammable liquid is heated for use to within 30 °F of its flash point, it shall be handled in accordance with the requirements for a Category 3 liquid with a flash point at or above 100 °F. When liquid with a flash point greater than 199.4 °F is heated for use to within 30 °F of its flash point, it shall be handled in accordance with the requirements for a Category 4 flammable liquid.

Flash Point – the temperature at which a liquid gives off enough vapors in sufficient concentration to form an ignitable mixture with air near the surface of the liquid.

Boiling Point – the temperature above which a liquid begins to form bubbles (boils), usually at standard atmospheric pressure.

WELCOME NEW MEMBER:

Viega, 997 Johnnie Dodds Blvd., Apt. 1013, Mt. Pleasant, SC 29464

Happy New Year!!



AULD LANG SYNE
BABY
BALL
BALLOONS
CALENDAR
CELEBRATION
CHAMPAGNE
CLOCK
CONFETTI
COUNTDOWN
DANCING
DECEMBER
EVE

FATHER TIME
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FLUTE
GAMES
GOWN
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HAT
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INVITATION
JANUARY
KISS
MIDNIGHT

MUSIC
NOISE MAKER
PARTY
RESOLUTION
SPARKLER
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TIMES SQUARE
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TRADITION
TUXEDO
VOW
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Coastal Area Joint Christmas Party with NAWIC 12/7/2023





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MARK YOUR CALENDARS

Area Meetings & Upcoming Events

Piedmont Area

Tuesday, January 16, 2024 at 6:00 pm
Hosted by: Yandle-Witherspoon Supply
Location: 45 Brookfield Oaks Drive Suite 300, Greenville, SC
Speaker: TBD
Program: TBA



Midlands Area

Thursday, January 9, 2024 at 6:00 pm
Sponsored/Hosted by: Ferguson Enterprises
Location: Quaker Steak & Lube
2154 S. Bellline Blvd., Columbia
Come enjoy good food, fun, fellowship and bowling with
the Midlands Chapter



Pee Dee Area

Thursday, January 11, 2024 at 6:30 pm
Hosted by: City Plumbing Company
Location: Roger's BBQ, 2004 W. 2nd Loop Road, Florence, SC
Program: Expanding the Mechanical Contracting Trades at Florence District 1 Schools
Speaker: Scott Szalwinski, Electricity Instructor



Pick A Winner for Education—Winner Of Drawing Was Mark Matz

Coastal Area

Tuesday, January 23 at 5:30 pm
Hosted by: Atlantic Coast Electric Supply
Location: 332-A International Circle, Summerville, SC
Speaker: Charles L. Appleby, IV, Sr. Advisor, Coordinating Council,
SC Dept. of Employment & Workforce
Program: "SC Workforce Development Information"





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Congratulations to our Associate &
Mechanical Members who will be
highlighted in the next issue of

"The Tool Box"

Associate Member



Mechanical Member



[Update Your](#)

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Let us know if we need to
update your Outlook
or if you know some-

MCASC Vision Statement

The Mechanical Contractors Association of South Carolina (MCASC) will be the leading construction association in South Carolina for specialty contractors and suppliers in the electrical, mechanical (HVAC), and plumbing fields by serving its membership, the industry, and the Community in a vibrant and harmonious fashion.

MCASC Mission Statement

The Mechanical Contractors Association of South Carolina (MCASC) will provide its membership with:

- current business/technical information and support
- a proactive political/legislative agenda
- a joint industry collaboration to improve relative business practices
- an ongoing effort to offer training opportunities for both professional and craft personnel
- educational scholarships for deserving students
- the development of industry related career opportunities

The Associations objective for this mission is to enhance the future of the Construction Industry in South Carolina.