

Supplementary Material

Supplementary Experiment S1. The Big Bang Theory

The successful television series The Big Bang Theory, which premiered in 2007, starring Johnny Galecki as Leonard Hofstadter and Jim Parsons as Sheldon Cooper. This television series consists of twelve seasons and relates the incredible adventures of five characters, including Penny, Howard Wolowitz, Raj Koothrappali, Leonard Hofstadter, and Sheldon. The obtained graph from the video¹ is illustrated in Fig. 1.

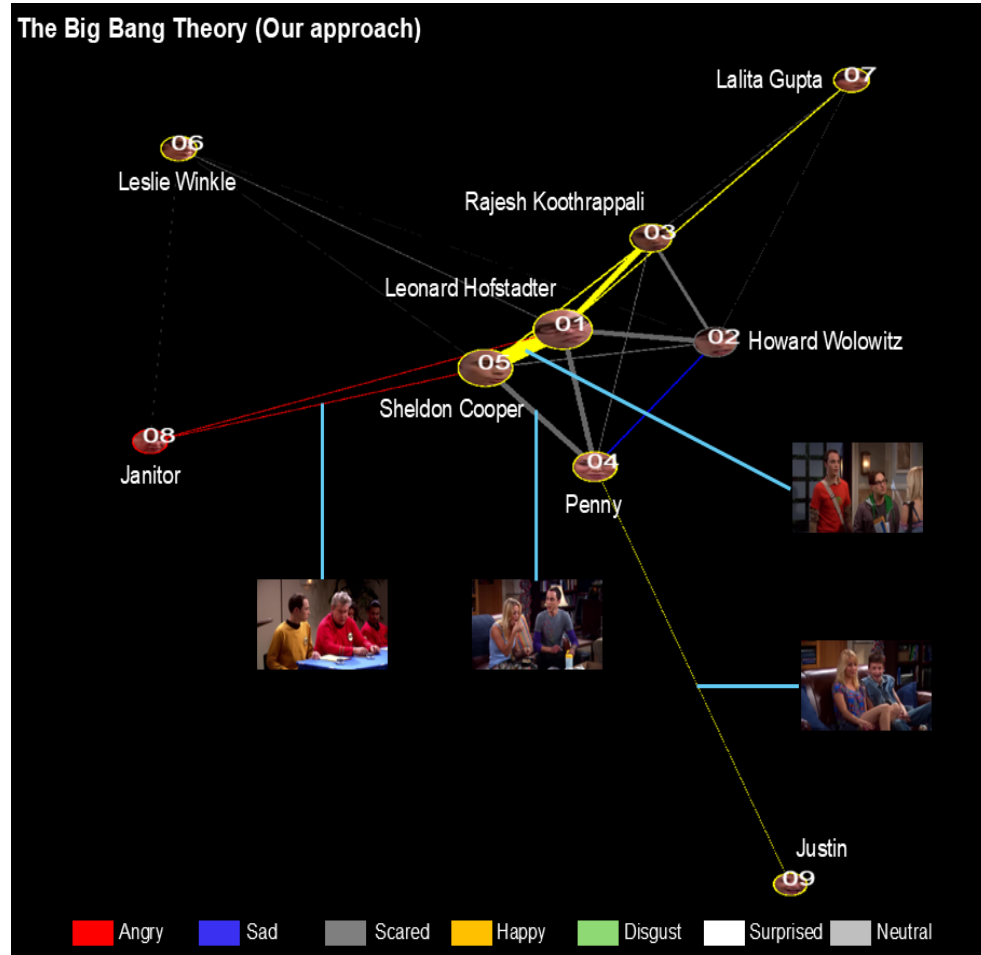


Fig. 1 Graph representation. Experiment E) The Big Bang Theory, proposed graph representation from the television series. In addition, some examples of the GUI. The color of the node boundaries is related to the predominant facial expression, and the color of the lines to the most common expression.

¹See video on <https://youtu.be/iMM6s4wDSYA>.

Supplementary Experiment S2. G7 Leaders' Summit

The 2025 G7 Leaders' Summit brought together the heads of state of the world's most important economies. The venue for the event was Kananaskis, Alberta, Canada, from June 15 to 17, 2025, with the participation of European Council President Antonio Costa; European Commission President Ursula von der Leyen; French President Emmanuel Macron; US President Donald Trump; and ministers Mark Carney, Giorgia Meloni, Shigeru Ishiba, and Keir Starmer from Canada, Italy, Japan, and the United Kingdom, respectively. Additionally, leaders from India, Brazil, Ukraine, Mexico, South Africa, and South Korea attended the summit as guests. Representatives from international organizations, including OTAN, the United Nations, and the World Bank, were also invited. The obtained graph from the videos² is illustrated in Fig. 2.

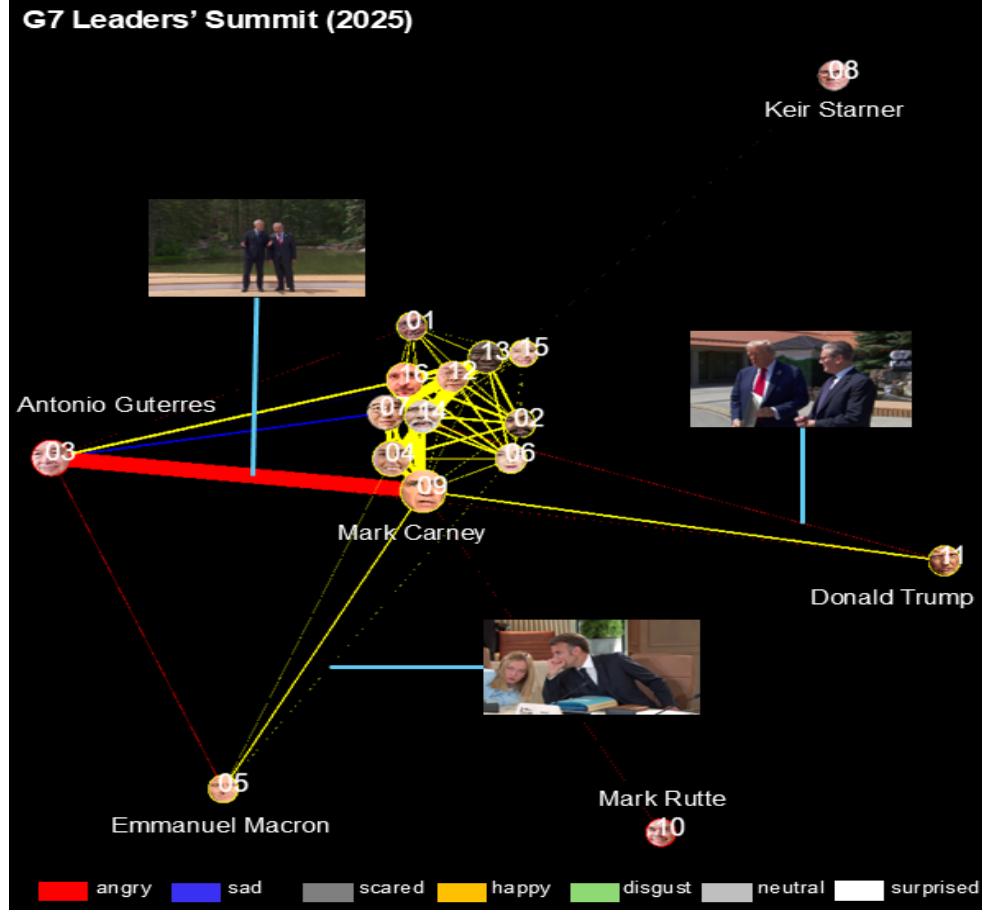


Fig. 2 Graph representation. Experiment F) G7 Leaders' Summit, proposed graph representation of the annual meeting. In addition, some examples of the GUI. The color of the node boundaries is related to the predominant facial expression, and the color of the lines to the most common expression.

²See both videos on <https://youtu.be/sPomYSG-3bM&t=1s>, <https://youtu.be/b2irNWFc4-U> and <https://youtu.be/-KTIpCaCCT8&t=1s>.

Supplementary Experiment S3. Chavo, The Child of 8

The Child of 8 is a Mexican comedy television series premiered in 1973, produced by Televisión Independiente de México. The show is about the life of a child without a family or home, who has taken refuge in a neighborhood. This place also tells the experiences of a group of people who live in the neighborhood where the protagonist gets into mischief with his friends. The cast of the series includes Roberto Gómez Bolaños as Chavo, María Antonieta as Chilindrina, Ramón Valdés as Don Ramón, Rubén Aguirre as The teacher Jirafales, Carlos Villagrán as Quico, Florinda Meza as Doña Florinda, and Angelines Fernández as Doña Clotilde. The obtained graph from the video³ is illustrated in Fig. 3.

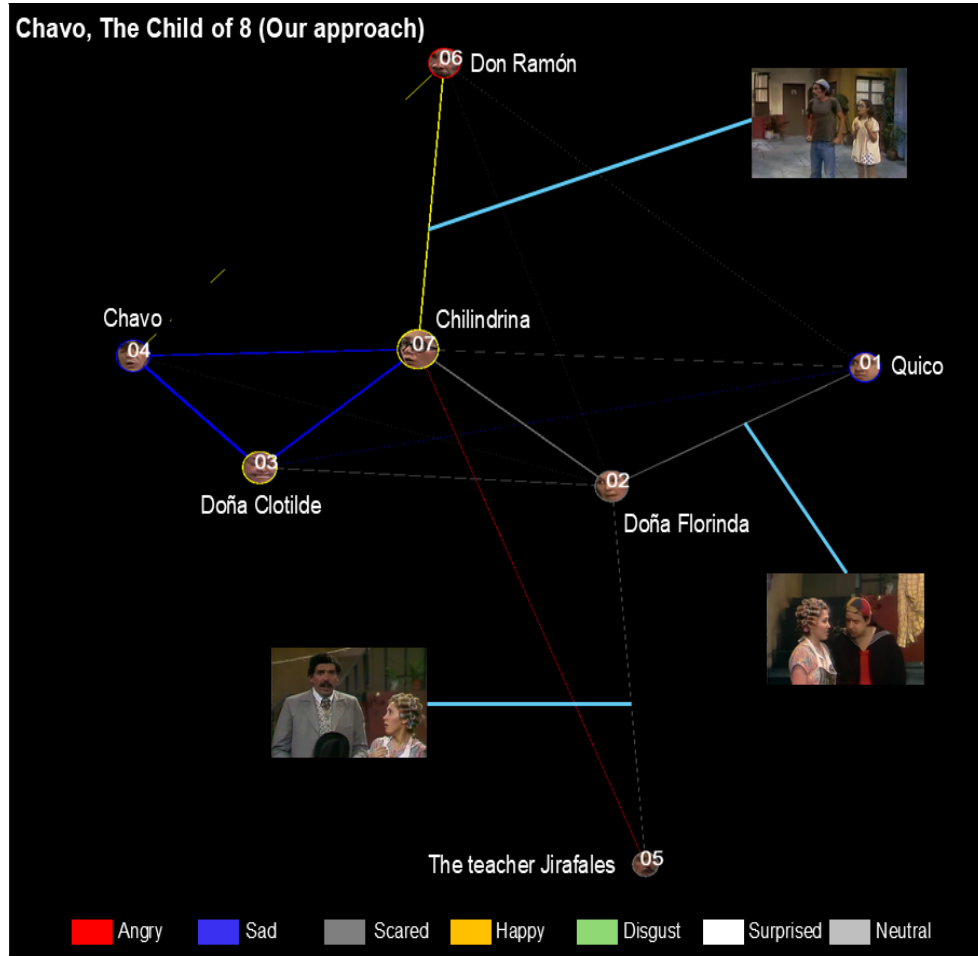


Fig. 3 Graph representation. Experiment G) Chavo, The Child of 8, proposed graph representation from the television series. In addition, some examples of the GUI. The color of the node boundaries is related to the predominant facial expression, and the color of the lines to the most common expression.

³See video on <https://youtu.be/N37zRj0M.YE>.

Supplementary Experiment S4. Game of Thrones

Game of Thrones is a drama television series set in a fictional continent. It is an adaptation of A Song of Ice and Fire, a series of high fantasy novels. The main story describes the continent of Westeros, divided into the Seven Kingdoms and the lands in the far North. The Seven Kingdoms were independent and unified under a single monarch. The series related to the lives of several noble houses of Westeros and a complicated war for the Iron Throne features shifting conflicts, alliances, and betrayals. Key houses include the Starks, Lannisters, Baratheons, and the Targaryens. The main cast of the series includes Peter Dinklage as Tyrion Lannister, Emilia Clarke as Daenerys Targaryen, Kit Harington as Jon Snow, Maisie Williams as Arya Stark, and Isaac Hempstead as Bran Stark. The obtained graph from the video⁴ is show in Fig. 4.

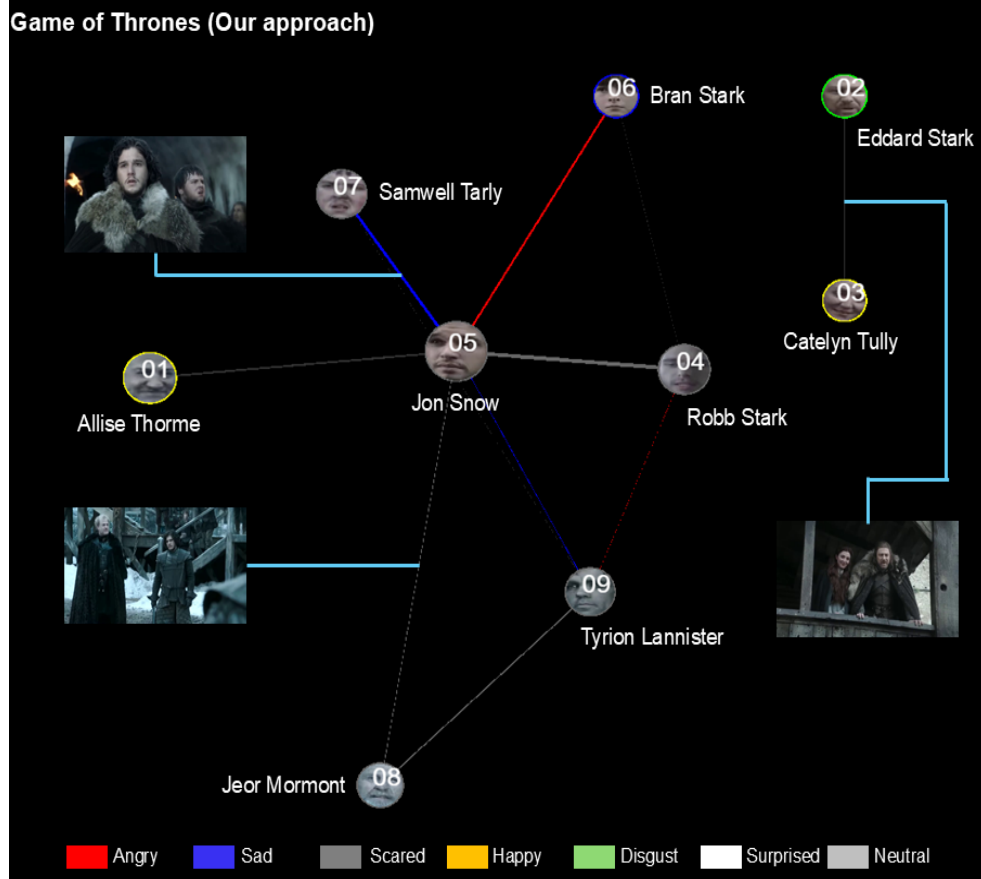


Fig. 4 Graph representation. Experiment H) Game of Thrones, proposed graph representation of the television series. In addition, some examples of the GUI (see text). The color of the node boundaries is related to the predominant facial expression, and the color of the lines to the most common expression.

⁴See video on <https://youtu.be/X0LAe4W00zQ>.

Supplementary Experiment S5. Friends

The successful television series Friends follows the adventures in work, love, and life of six friends living in Manhattan during the 1990s. The main plot addresses real-world issues through humor, emphasizing friendships, love, and the struggles of life, trying to get ahead, personally and professionally. The series stars Matthew Perry as Chandler Bing, Lisa Kudrow as Phoebe Buffay, Matt LeBlanc as Joey Tribbiani, Jennifer Aniston as Rachel Green, David Schwimmer as Ross Geller, and Courteney Cox as Monica Geller. The obtained graph from the video⁵ is illustrated in Fig. 5.

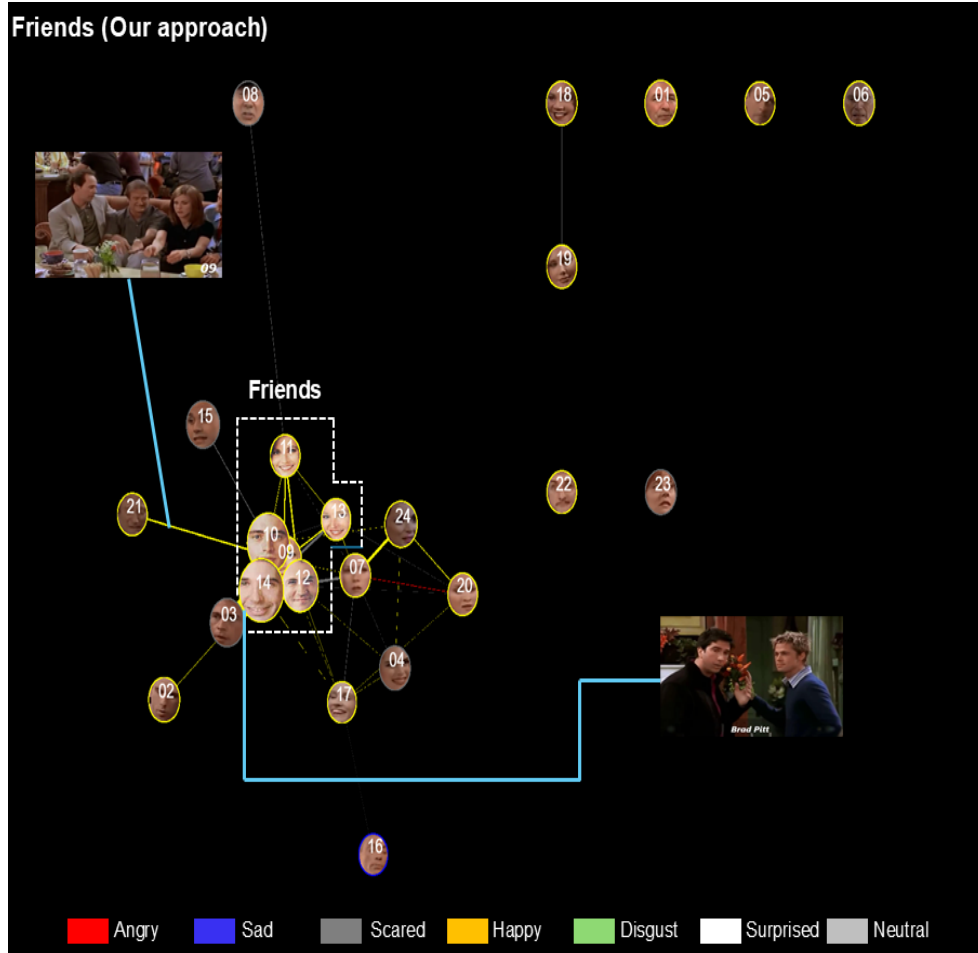


Fig. 5 Graph representation. Experiment I) Friends, proposed graph representation from the television series. In addition, some examples of the GUI. The color of the node boundaries is related to the predominant facial expression, and the color of the lines to the most common expression (see text).

⁵See video on <https://youtu.be/7Gb0UIFa87g>.

Supplementary Experiment S6. Volleyball Game

We downloaded from Flickr the album “VBVBA RVC 2 2010”⁶. of pictures taken by Bruce A Stockwell4. In these pictures, we observe pictures of different volleyball games played on April 2010 by teenage players. This dataset has 1131 images and 4550 faces. The obtained graph is illustrated in Fig. 6. In this set, there are two teams of players (see red and white stars included manually in the graph). The obtained graph from the collection of images is illustrated in Fig. 6.

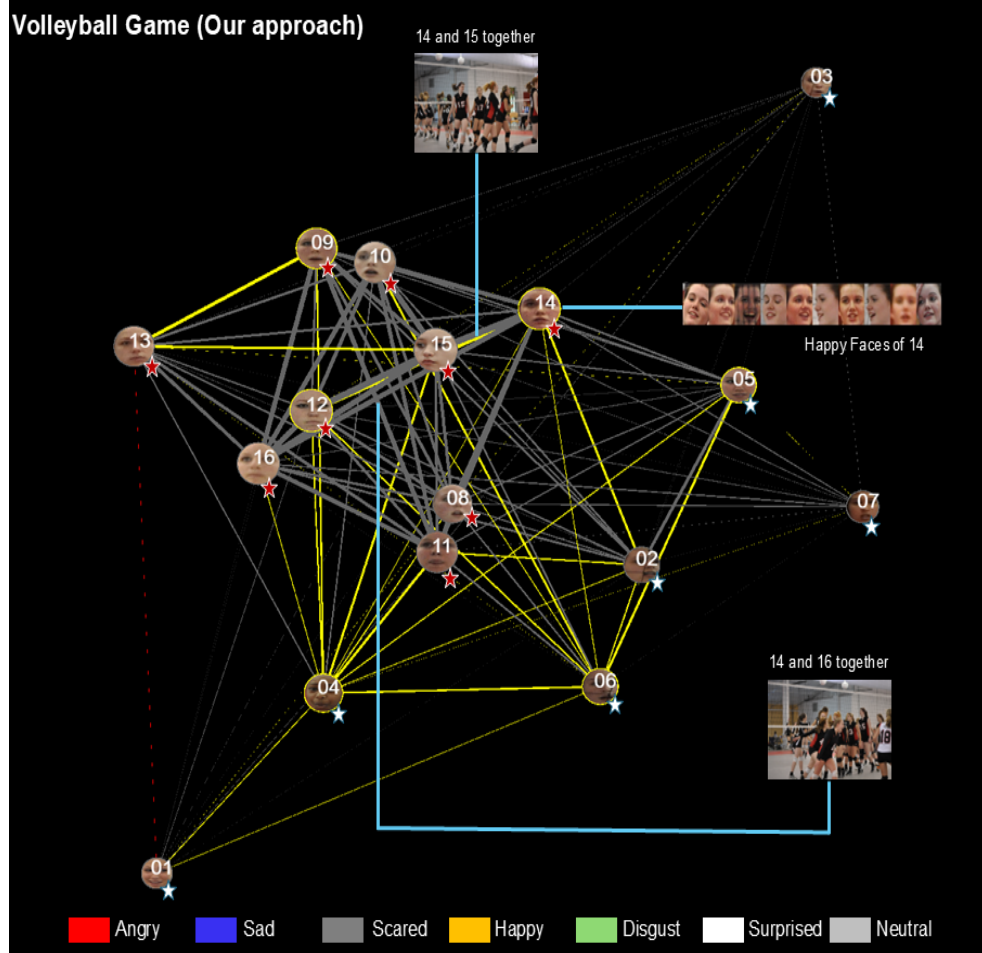


Fig. 6 Graph representation. Experiment J) Volleybal Game, proposed graph representation of the collection of images. In addition, some examples of the GUI. The color of the node boundaries is related to the predominant facial expression, and the color of the lines to the most common expression.

⁶See website on: <https://www.flickr.com/photos/bas68/albums/72157624234584197/>.
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Supplementary Experiment S7. Donald Trump – The Squad

On July 19th, 2019, we downloaded images from Twitter given the hashtags #Trump and #DonaldTrump. In those days, there was a problem between Trump and four Democratic congresswomen (known as The Squad). This dataset has 494 images (126 were automatically removed because they were duplicated), and 677 faces. The obtained graph from the collection of images is illustrated in Fig. 7.

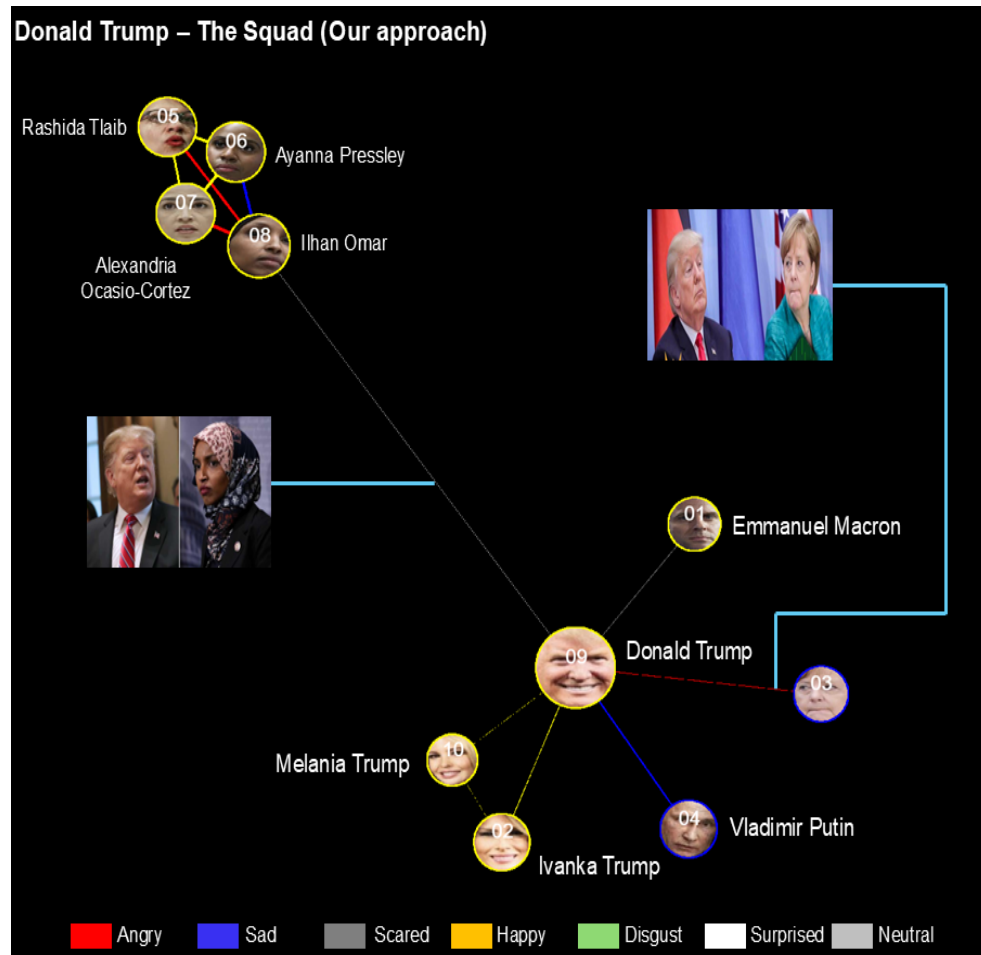


Fig. 7 Graph representation. Experiment K) Donald Trump - The Squad, proposed graph representation. In addition, some examples of the GUI (see text). The color of the node boundaries is related to the predominant facial expression, and the color of the lines to the most common expression (see text).